Ⓓ GX-N7U/U
GX-N4U/U

JVC

SERVICE MANUAL

COLOR VIDEO CAMERA

MODEL GX-N7U/UT GX-N4U/UT Modified One

ADDITIONAL CHANGES IN PARTS LIST

1. Correction of SW Regulator Interchangeability

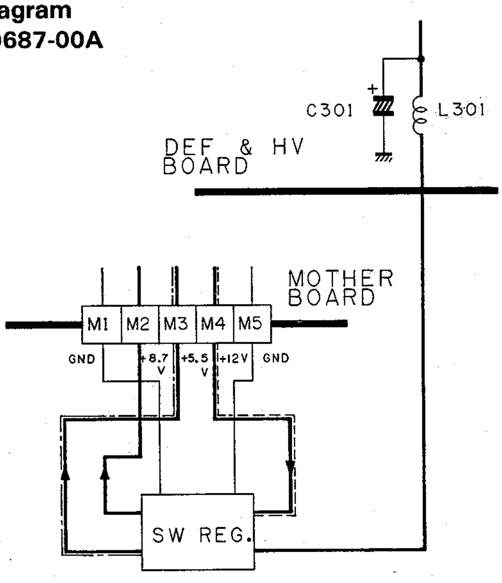
Misprint in SYSTEM ASSEMBLY REPLACEMENT PARTS LIST of the GX-N7U/UT, N4U/UT modified one (No. 5506B/5519B, issued Nov. 1984) has been found.

Please correct Interchangeability according to parts list below.

Page	View No.	Part No.		Part Name	Interchangeability
		Previous	Present		
3	36	CE40687-00A	CE40687-C0A	SW Regulator	×
Remarks		M connector is 5 pin type (M1 ~ M5)	M connector is 6 pin type (M1 ~ M6)		

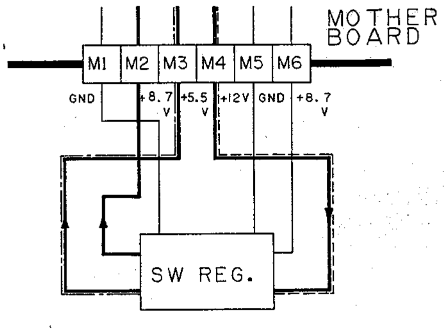
×: Interchangeability does not exist.

Circuit Diagram
CE40687-00A


C301
L301
DEF & HV BOARD
MOTHER BOARD
M1
M2
M3
M4
M5
GND
+8.7 V
+5.5 V
+12V
GND
SW REG.

CE40687-00A

CE40687-C0A (partially **CE40687-A0A** **CE40687-B0A**)


MOTHER BOARD
M1
M2
M3
M4
M5
M6
GND
+8.7 V
+5.5 V
+12V
GND
+8.7 V
SW REG.

CE40687-C0A

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GX-N7U/UT : No. 550
GX-N4U/UT : No. 551
June 19

2. Concerning supply of Body Cover Ass'y

Notice on additions and corrections in the part list of GX-N7U/UT, N4U/UT Service Manual (No. 5506/No. 5519), Modified version (No. 5506B/No. 5519B).

From May 1985, the Body Cover is assembled unit when ordered with the part number listed.
Body Cover, Body AL Cover and Earth Foil are needed unavoidably, one unit of them (Body Cover Ass'y) will be supplied.
Because Body Cover, Body AL Cover and Earth Foil can't be separated easily.
One the occation of orders, please consider above-mentioned contents.

Page	View No.	Part No.		Part Name	Remarks
		Previous	Present		
6	71-1	CM10335-A01-MO	———	Body Cover-L	Left side, For GX-N7U/UT
	71-2	CM10335-A03-MO	———	〃	〃 For GX-N4U/UT
	72	CM20537-001	———	Body AL Cover-L	〃
	88	CM42746-001	———	Earth Foil	〃
		———	N7U-BCLA	Body Cover L-Ass'y	〃 For GX-N7U/UT
		———	N4U-BCLA	〃	〃 For GX-N4U/UT
6	81-1	CM10334-001-MO	———	Body Cover-R	Right side, For GX-N7U/UT
	81-2	CM10334-002-MO	———	〃	〃 For GX-N4U/UT
	82	CM20534-001	———	Body AL Cover-R	〃
	88	CM42746-001	———	Earth Foil	〃
		———	N7U-BCR	Body Cover-R Ass'y	〃 For GX-N7U/UT
		———	N4U-BCR	〃	〃 For GX-N4U/UT

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Printed in Japan
8506 OZAKI
J.K.

JVC

SERVICE MANUAL

[illegible]

MODEL GX-N7U/UT GX-N4U/UT Modified One

Additions and partial changes/corrections on GX-N7U/UT, GX-N4U/UT SERVICE MANUAL.

* You are advised of the following additions and changes/corrections effected on Service Manual **No. 5506D/5519D** for **GX-N7U/UT, GX-N4U/UT**. Please incorporate the necessary additions and changes/corrections in accordance with the contents of this notice.

* As for those sections not specifically mentioned herein, descriptions in the previously issued Service Manual remain effective.

CONTENTS

1. STANDARD CIRCUIT DIAGRAM
2. PARTS LIST

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GX-N7U/UT : No. 5506E
GX-N4U/UT : No. 5519E
Nov. 1985

GX-N7U/UT
GX-N4U/UT Modified One

STANDARD CIRCUIT DIAGRAM

CONTENTS

1. CHANGES ON PRESENTLY USED PC BOARDS 2
2. NOTES ON USING CIRCUIT DIAGRAMS 3
3. PIN ARRANGEMENTS OF ICs, TRANSISTORS AND DIODES 4
4. WIRING DIAGRAM 5
5. BLOCK DIAGRAM OF EVF 7
6. BLOCK DIAGRAM OF LENS (GX-N7U/UT) 8
7. BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N7U/UT) 9
8-1. CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N7U/UT)(CA-1071C) 11
8-2. BOARD DIAGRAM OF MOTHER BOARD (CA-1071C) 13
9-1. CIRCUIT DIAGRAM OF PRE-AMP (CA-2071A) 15
9-2. BOARD DIAGRAM OF PRE-AMP (CA-2071A) 15
10-1. CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ (CA-A005A) 16
10-2. BOARD DIAGRAM OF AUDIO BOARD Ⓐ (CA-A005A) 16
11-1. CIRCUIT DIAGRAM OF PRE-PROCESS BOARD Ⓑ (CA-B001A) 17
11-2. BOARD DIAGRAM OF PRE-PROCESS BOARD Ⓑ (CA-B001A) 17
12-1. CIRCUIT DIAGRAM OF CARRIER MATRIX BOARD Ⓒ (CA-C001A) 18
12-2. BOARD DIAGRAM OF CARRIER MATRIX BOARD Ⓒ (CA-C001A) 18
13-1. CIRCUIT DIAGRAM OF DETECTOR BOARD Ⓓ (CA-D001A) 19
13-2. BOARD DIAGRAM OF DETECTOR BOARD Ⓓ (CA-D001A) 19
14-1. CIRCUIT DIAGRAM OF BLACK SET/AUTO WHITE BOARD Ⓔ (CA-E005A) 20
14-2. BOARD DIAGRAM OF BLACK SET/AUTO WHITE BOARD Ⓔ (CA-E005A) 20
15-1. CIRCUIT DIAGRAM OF COLOR γ BOARD Ⓕ (CA-F001A) 21
15-2. BOARD DIAGRAM OF COLOR γ BOARD Ⓕ (CA-F001A) 21
16-1. CIRCUIT DIAGRAM OF CDP BOARD Ⓖ (CA-G001A) 22
16-2. BOARD DIAGRAM OF CDP BOARD Ⓖ (CA-G001A) 22
17-1. CIRCUIT DIAGRAM OF AGC BOARD Ⓗ (CA-H001A) 23
17-2. BOARD DIAGRAM OF AGC BOARD Ⓗ (CA-H001A) 23
18-1. CIRCUIT DIAGRAM OF ENCODER BOARD Ⓙ (CA-J003A) 24
18-2. BOARD DIAGRAM OF ENCODER BOARD Ⓙ (CA-J003A) 24
19-1. CIRCUIT DIAGRAM OF SSG BOARD Ⓚ (CA-K001A) 25
19-2. BOARD DIAGRAM OF SSG BOARD Ⓚ (CA-K001A) 25
20-1. CIRCUIT DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ (CA-L003A) 26
20-2. BOARD DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ (CA-L003A) 26
21. CIRCUIT DIAGRAM OF SW. REGULATOR (CE40687) 27
22. BOARD DIAGRAM OF MIC BOARD (CA-M003A) 28
23. BOARD DIAGRAM OF TUBE SOCKET BOARD 28
24. BOARD DIAGRAM OF BIAS LIGHT BOARD (CA-8071A) 28
25-1. CIRCUIT DIAGRAM OF EVF (CA-6071A) 29
25-2. BOARD DIAGRAM OF EVF (CA-6071A) 30
26. CIRCUIT DIAGRAM OF GX-N4U/UT 31
27. BOARD DIAGRAM OF MIC BOARD (CA-M004A) 32
28. BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N4U/UT) 33
29-1. CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N4U/UT) (CA-1073B) 35
29-2. BOARD DIAGRAM OF MOTHER BOARD (CA-1073B) 37
30-1. CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ (CA-A004A) 39
30-2. BOARD DIAGRAM OF AUDIO BOARD Ⓐ (CA-A004A) 39
31-1. CIRCUIT DIAGRAM OF BLACK SET BOARD Ⓔ (CA-E003A) 40
31-2. BOARD DIAGRAM OF BLACK SET BOARD Ⓔ (CA-E003A) 40

GX-N7U/UT : No. 5506E
GX-N4U/UT : No. 5519E
Oct. 1985

1 CHANGES ON PRESENTLY USED PC BOARDS

As a result of circuit changes on PC boards effected as follows during production, PC board patterns have been varied.
However, no changes were made on PC board numbers.
"☆" mark denotes the time when circuit changes were made.

- Time of PC board pattern changes

GX-N7U/UT

Board name		1984		1985				
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Mother board	CA-1071C						☆	
Audio	CA-A005A		☆					
Pre-process	CA-B001A		☆					
Carrier matrix	CA-C001A		☆					
Detector	CA-D001A							
Black set/Auto white	CA-E005A	☆						
Color γ	CA-F001A							
CDP	CA-G001A	☆						
AGC	CA-H001A				☆			
Encoder	CA-J003A				☆			
SSG	CA-K001A						☆	
VTR Trig./Batt. Alarm	CA-L003A				☆			
Mic	CA-M003A						☆	
EVF	CA-6071A						☆	

GX-N4U/UT

Board name		1985				
		Jan.	Feb.	Mar.	Apr.	May
Mother board	CA-1073B				☆	
Audio	CA-A004A		☆			
Pre-process	CA-B001A		☆			
Carrier matrix	CA-C001A		☆			
Detector	CA-D001A					
Black set/Auto white	CA-E003A		☆			
Color γ	CA-F001A					
CDP	CA-G001A		☆			
AGC	CA-H001A		☆			
Encoder	CA-J003A		☆			
SSG	CA-K001A			☆		
VTR Trig./Batt. Alarm	CA-L003A		☆			
Mic	CA-M004A				☆	
EVF	CA-6071A			☆		

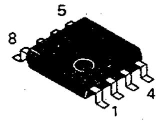
2 NOTES ON USING THIS CIRCUIT DIAGRAMS

1. Since the circuit diagram is a standard one, the circuit and circuit constants may be object to change for improvement without any notice.
2. Replacing the shaded (▨) parts in the circuit diagram, be sure to use parts specified to safety purposes.
3. The voltage values and waveforms have been measured under the following conditions:
   - Illumination : Illumination condition during adjustment
   - Object : JVC Gray scale pattern ($\gamma = 2.2$, 11 steps)
   - Iris : Iris switch ~ Auto iris (AGC ON) " Ⓐ ", iris compensation switch ~ "O" position
   - VTR mode indication : Pause mode
   - White balance : Indoor setting
   - Voltage values : All DC voltage values. Measured by a high-precision tester or digital voltmeter.
   - Waveforms : Oscilloscope sweep time H: 10 μS/div. V: 5 mS/div. Others: Measured time is shown. Usually a probe of 10 : 1 is used. (Indicated when a 1 : 1 probe is used.)

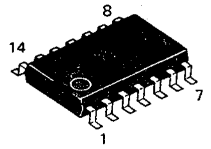
   * **Note**: See also the information given in the circuit diagram.
4. Indications on the circuit diagram.
   - Resistors
     10K: Resistance value
     non-unit: [Ω]
     K: [KΩ]
     M: [MΩ]
     1/2W: Rated allowable power [W]
     non-indication: 1/4 chip resistor or carbon resistor
   - Electrolytic Capacitors
     47/16: Capacitance value [μF] working voltage [V]
     NP/BP: Non-polar/bipolar electrolytic capacitor
     T or TAN: Tantalum capacitor
   - Capacitors
     0.033: Capacitance value
     1 or higher: [pF], less than 1 : [μF]
     100V: working voltage
     All DC voltage except for AC indicated.
     non-indication: 50V DC
     MY: Mylar capacitor
     PP: Polypropylene capacitor
     non-indication: Ceramic capacitor
   - Coils
     39 : Inductance value
     non-unit: [μH]
   - Connections
     ▭ : Connector
     △ or ➣ : Chip connector
     ○ : Soldering

   * Refer to the parts list in the Service manual about the detailed indications of parts.
5. It is possible than the wiring diagram is inconsistent with the actual connection because of certain design improvements, etc. The diagram, therefore, should be used only for reference.
6. **This circuit diagram is prepared primarily centered around GX-N7U/UT. As to GX-N4U/UT, only those points that differ from this diagram are described in the second parts of the Operation Manual. For details, refer to page 31 and therafter.**

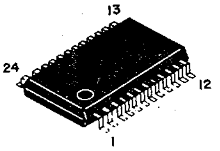
3 PIN ARRANGEMENTS OF ICs, TRANSISTORS AND DIODES



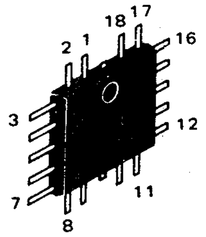
MN8029S (8 pin)
NJM082M (8 pin)
μPC4558G (8 pin)



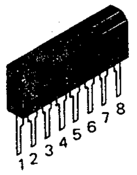
μPC4741G (14 pin)
μPD4013BG (14 pin)
TC4013BG (14 pin)
M51545P (16 pin)



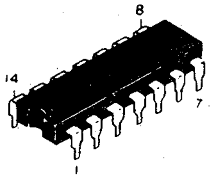
BA7020F (22 pin)
M51261P (20 pin)
M51262P (22 pin)
M51263P (24 pin)
AN2510S (24 pin)
M51264P (28 pin)


18
17
2
1
16
3
12
7
8
11

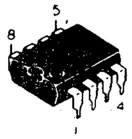
HA11720MP (18 pin)
HA11748B (28 pin)



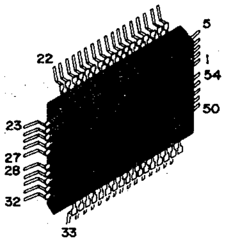
N5232L (8 pin)



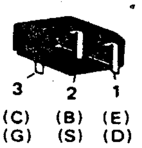
SN76670 (N) (14 pin)



NJM3414D (8 pin)


5
22
1
54
50
23
27
28
32
33

HD61907 (54 pin)

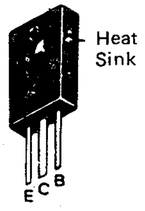


CHIP TRANSISTOR

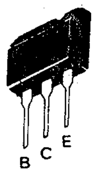
2SA1022 (C)
2SA1022 (B,C)
2SB709 (Q,R)
2SB709 (P-R)
2SB792 (Q-T)
2SB970 (Q-S)
2SC2404 (D)
2SC2405 (R-T)
2SC2778 (C,D)
2SC2778 (B,C)
2SD601 (QR)
2SD601A (QR)
2SD1030 (R)

CHIP FET

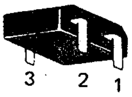
2SK316 (Q)


Heat Sink
E
C
B

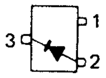
2SD781
2SD975



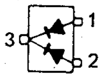
2SB788(T)



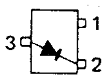
CHIP DIODE



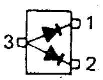
MA151K



MA151WK
MA157

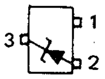


MA151A

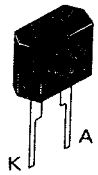


MA151WA

CHIP ZENER DIODE

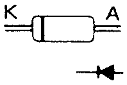


MA3062
MA3075
MA3051
MA3120
MA3047-L



VARIABLE CAPACITOR

KV-1236XY

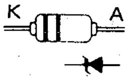


VERIABLE CAPACITOR DIODE

ISV68

DIODE

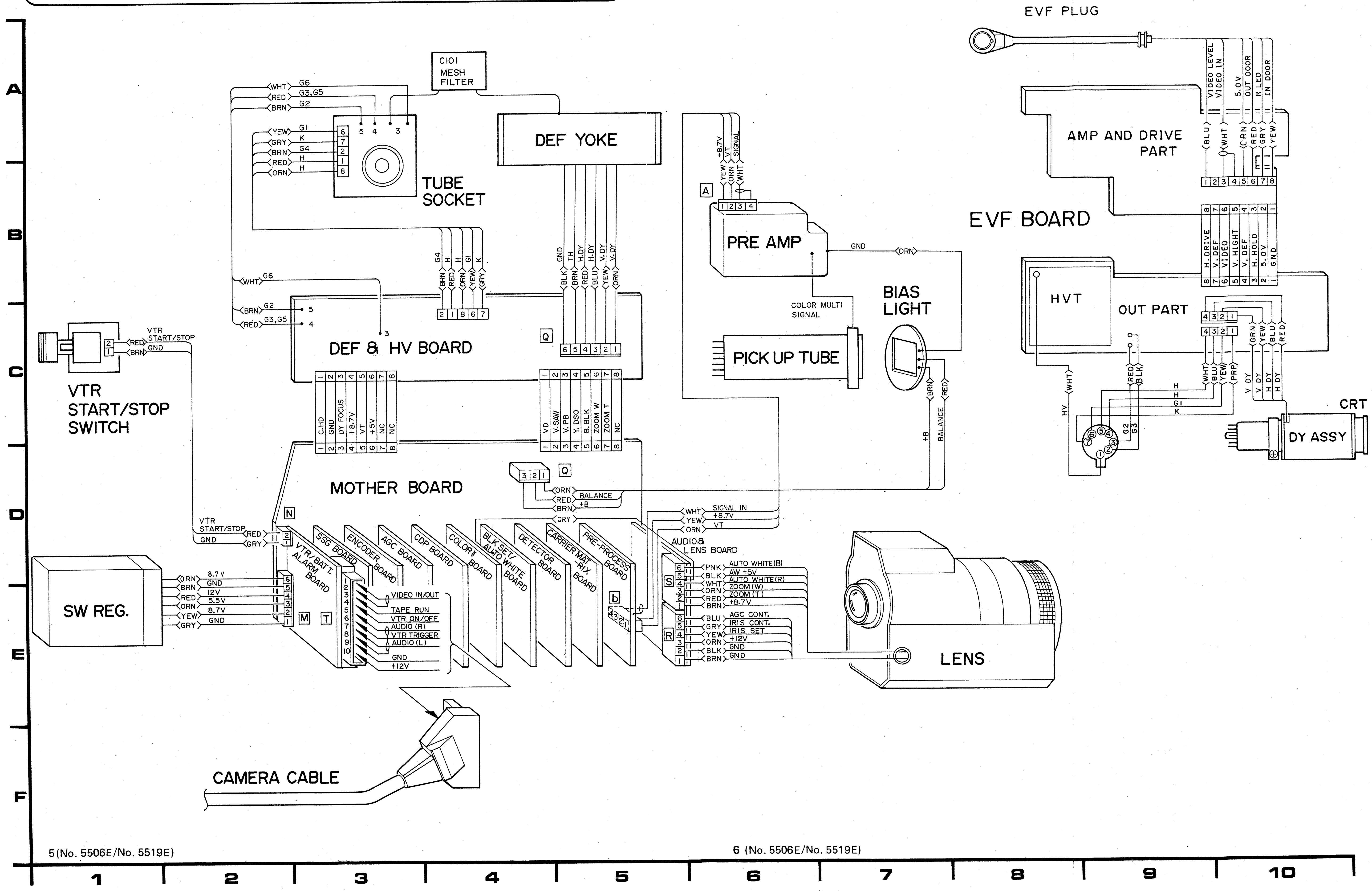
W06A
IS2473H



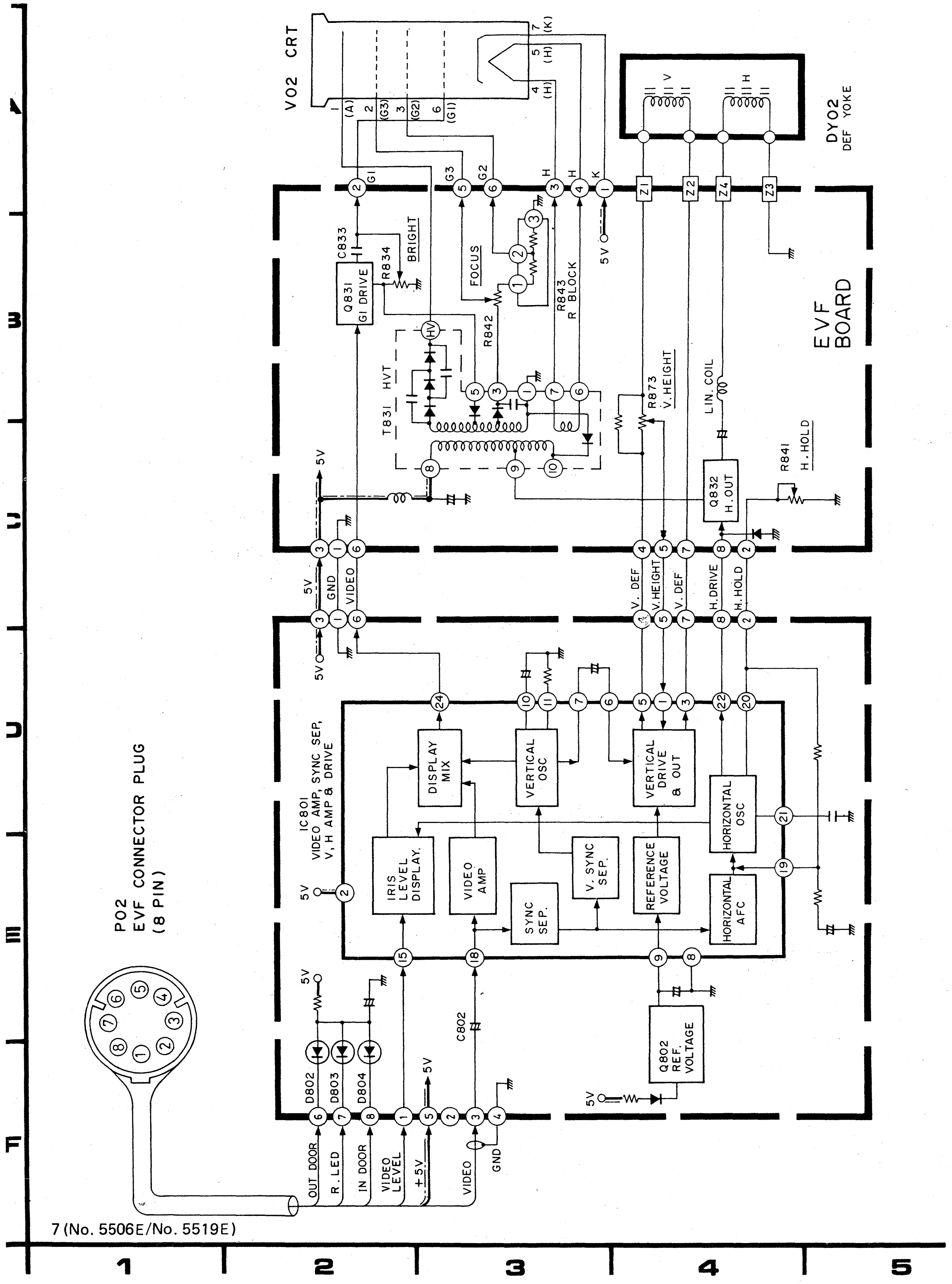
ZENER DIODE

MA4120

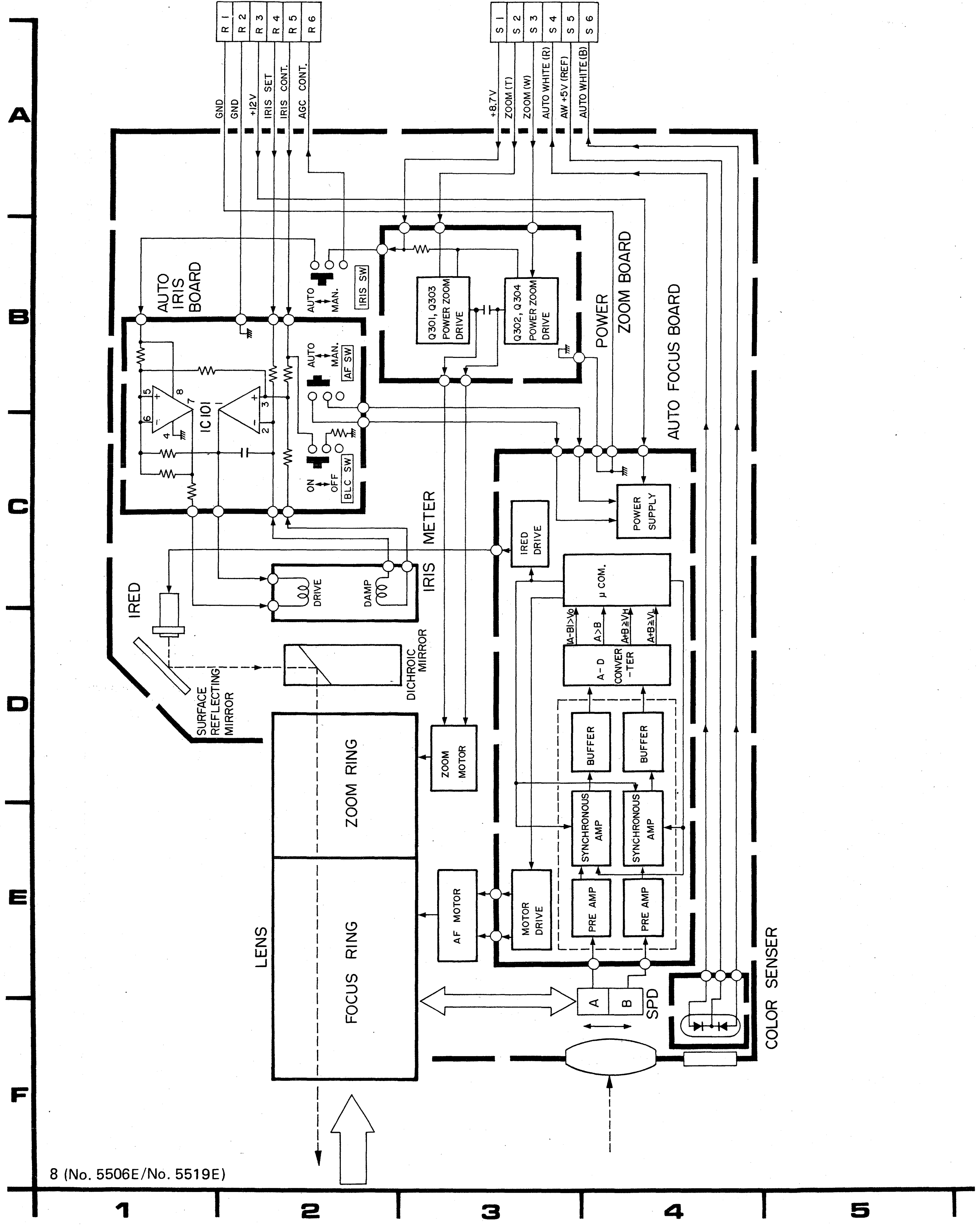
4 WIRING DIAGRAM


A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
C101 MESH FILTER
DEF YOKE
TUBE SOCKET
WHT G6
RED G3,G5
BRN G2
YEW G1
GRY K
BRN G4
RED H
ORN H
6 7 2 1 8
5 4 3
G4 H H G1 K
BRN RED ORN YEW GRY
2 1 8 6 7
GND TH H.DY H.DY V.DY V.DY
BLK BRN RED BLU YEW ORN
6 5 4 3 2 1
Q
DEF & HV BOARD
WHT G6
BRN G2
RED G3,G5
5
4
3
VTR START/STOP SWITCH
RED VTR START/STOP
BRN GND
C.HD GND DY FOCUS +8.7V VT +5V NC NC
VD V.SAW V.PB Y.DSO B.BLK ZOOM W ZOOM T NC
1 2 3 4 5 6 7 8
MOTHER BOARD
3 2 1
ORN BALANCE
RED +B
BRN
GRY
N
VTR START/STOP
GND
RED
GRY
SW REG.
ORN 8.7V
BRN GND
RED 12V
ORN 5.5V
YEW 8.7V
GRY GND
M
T
VTR/BATT. ALARM BOARD
SSG BOARD
ENCODER BOARD
AGC BOARD
CDP BOARD
COLOR BOARD
BLK SET/AUTO WHITE BOARD
DETECTOR BOARD
CARRIER MAT-RIX BOARD
PRE-PROCESS BOARD
VIDEO IN/OUT
TAPE RUN
VTR ON/OFF
AUDIO (R)
VTR TRIGGER
AUDIO (L)
GND
+12V
b
CAMERA CABLE
A
+8.7V VT SIGNAL
YEW ORN WHT
1 2 3 4
PRE AMP
GND
ORN
COLOR MULTI SIGNAL
PICK UP TUBE
BIAS LIGHT
BRN
RED
+B
BALANCE
WHT SIGNAL IN
YEW +8.7V
ORN VT
AUDIO & LENS BOARD
S
PNK AUTO WHITE(B)
BLK AW +5V
WHT AUTO WHITE(R)
ORN ZOOM (W)
RED ZOOM (T)
BRN +8.7V
R
BLU AGC CONT.
GRY IRIS CONT.
YEW IRIS SET
ORN +12V
BLK GND
BRN GND
LENS
EVF PLUG
VIDEO LEVEL
VIDEO IN
5.0V
OUT DOOR
R LED
IN DOOR
AMP AND DRIVE PART
BLU WHT GRN RED GRY YEW
1 2 3 4 5 6 7 8
EVF BOARD
H. DRIVE
V. DEF
VIDEO
V. HIGHT
V. DEF
H. HOLD
5.0V
GND
HVT
OUT PART
4 3 2 1
GRN YEW BLU RED
WHT BLU YEW PRP
RED BLK
WHT
HV
H
H
G1
K
G2
G3
V DY
V DY
H DY
H DY
CRT
DY ASSY

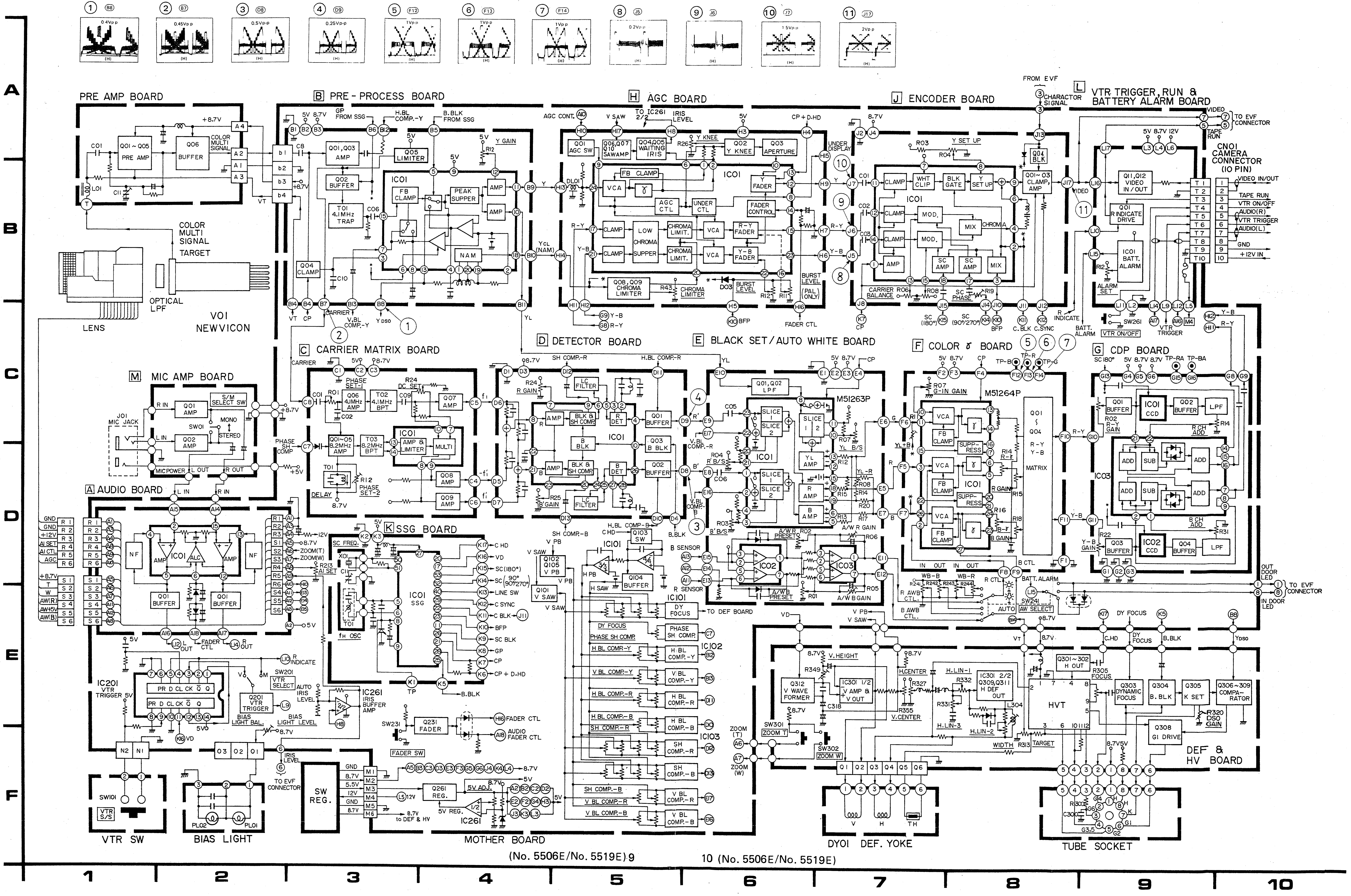
5 BLOCK DIAGRAM OF EVF


V02 CRT
1 (A)
2 (G3)
3 (G2)
6 (G1)
7 (K)
5 (H)
4 (H)
DY02 DEF YOKE
V
H
EVF BOARD
G1
G3
G2
H
H
K
Z1
Z2
Z4
Z3
C833
Q831 G1 DRIVE
R834 BRIGHT
FOCUS
R842
R843 R BLOCK
HV
T831 HVT
R873 V. HEIGHT
LIN. COIL
R841 H. HOLD
Q832 H. OUT
5V
GND
VIDEO
V. DEF
V. HEIGHT
V. DEF
H. DRIVE
H. HOLD
IC801 VIDEO AMP, SYNC SEP, V, H AMP & DRIVE
DISPLAY MIX
VERTICAL OSC
VERTICAL DRIVE & OUT
HORIZONTAL OSC
IRIS LEVEL DISPLAY.
VIDEO AMP
SYNC SEP.
V. SYNC SEP.
REFERENCE VOLTAGE
HORIZONTAL AFC
C802
D802
D803
D804
Q802 REF. VOLTAGE
P02 EVF CONNECTOR PLUG (8 PIN)
OUT DOOR
R. LED
IN DOOR
VIDEO LEVEL
+5V
VIDEO
GND
A
B
C
D
E
F
1
2
3
4
5

6 BLOCK DIAGRAM OF LENS (GX-N7U/UT)

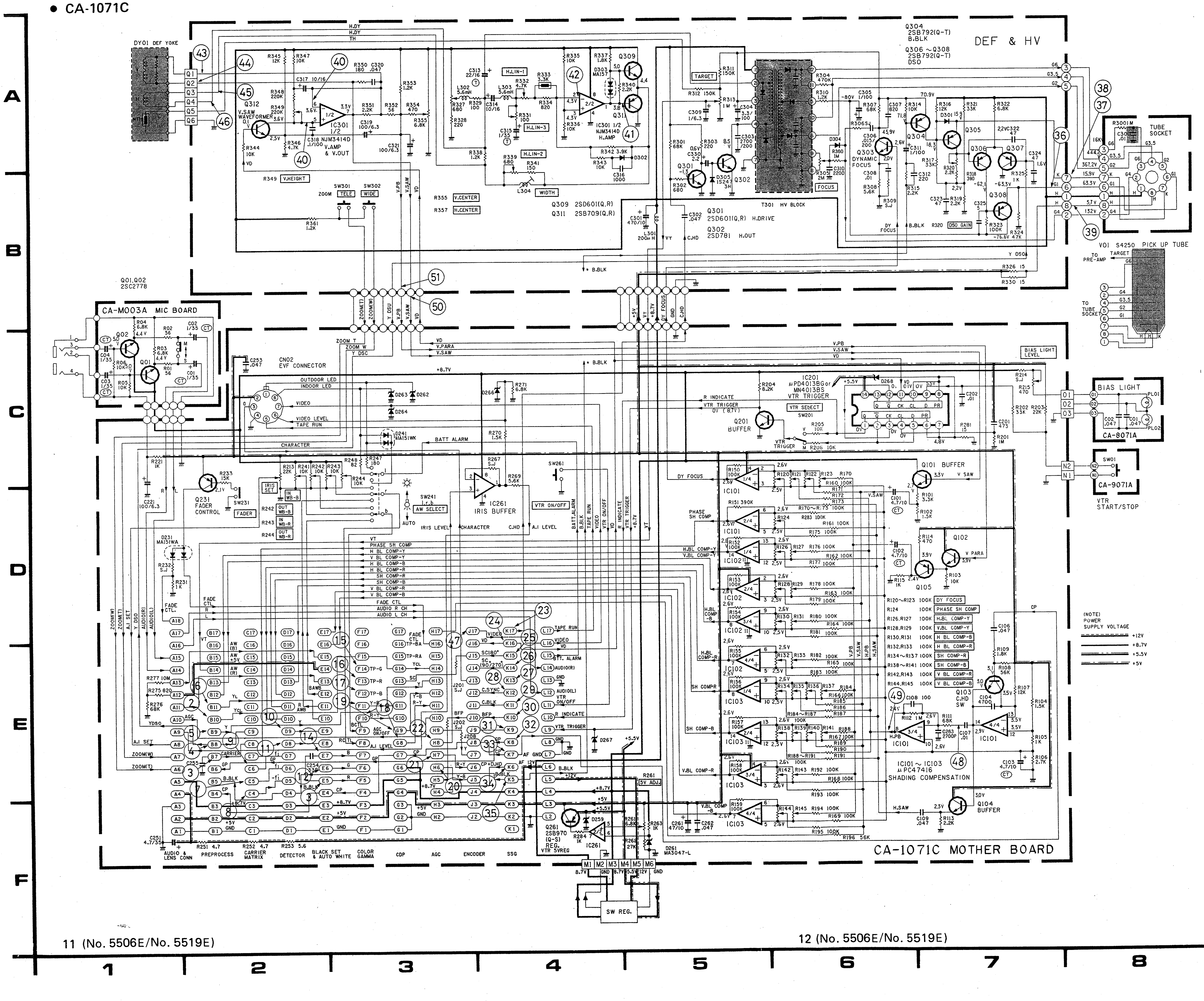

R1
R2
R3
R4
R5
R6
GND
GND
+12V
IRIS SET
IRIS CONT.
AGC CONT.
S1
S2
S3
S4
S5
S6
+8.7V
ZOOM (T)
ZOOM (W)
AUTO WHITE (R)
AW +5V (REF)
AUTO WHITE (B)
AUTO IRIS BOARD
AUTO MAN. IRIS SW
AUTO MAN. AF SW
ON OFF BLC SW
IC101
Q301, Q303 POWER ZOOM DRIVE
Q302, Q304 POWER ZOOM DRIVE
POWER ZOOM BOARD
AUTO FOCUS BOARD
POWER SUPPLY
IRED DRIVE
μ COM.
|A-B|>Vo
A>B
A+B≧V1
A+B≦V1
A-D CONVER-TER
BUFFER
BUFFER
SYNCHRONOUS AMP
SYNCHRONOUS AMP
PRE AMP
PRE AMP
MOTOR DRIVE
AF MOTOR
ZOOM MOTOR
METER
IRIS
DRIVE
DAMP
IRED
DICHROIC MIRROR
SURFACE REFLECTING MIRROR
ZOOM RING
FOCUS RING
LENS
SPD
A
B
COLOR SENSER
A
B
C
D
E
F
1
2
3
4
5

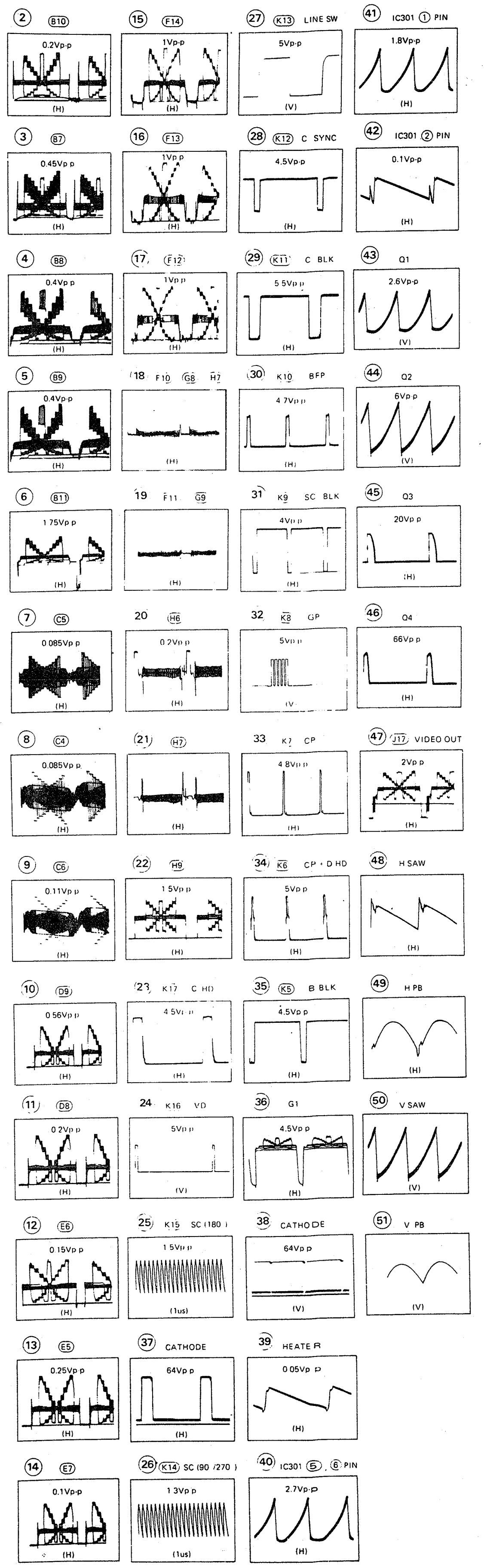
7 BLOCK DIAGRAM OF MAIN CIRCUIT(GX-N7U/UT)


① B8 0.4Vp-p
② B7 0.45Vp-p
③ D8 0.5Vp-p
④ D9 0.25Vp-p
⑤ F12 1Vp-p
⑥ F13 1Vp-p
⑦ F14 1Vp-p
⑧ J5 0.2Vp-p
⑨ J6
⑩ J7 1.5Vp-p
⑪ J17 2Vp-p
PRE AMP BOARD
Q01～Q05 PRE AMP
Q06 BUFFER
COLOR MULTI SIGNAL
TARGET
OPTICAL LPF
V01 NEWVICON
LENS
B PRE-PROCESS BOARD
Q01,Q03 AMP
Q02 BUFFER
T01 4.1MHz TRAP
Q04 CLAMP
Q05 LIMITER
IC01
FB CLAMP
PEAK SUPPER
NAM
Y GAIN
YCL (NAM)
H AGC BOARD
AGC CONT.
Q01 AGC SW
Q06,Q07 Q10 SAWAMP
Q04,Q05 WAITING IRIS
Q02 Y KNEE
Q03 APERTURE
FB CLAMP
VCA
AGC CTL
UNDER CTL
Y FADER
FADER CONTROL
CLAMP
LOW CHROMA SUPPER
CHROMA LIMIT.
R-Y FADER
B-Y FADER
Q08,Q09 CHROMA LIMITER
CHROMA LIMITER
BURST LEVEL
FADER CTL
J ENCODER BOARD
Y SET UP
CLAMP
WHT CLIP
BLK GATE
MOD.
MIX
CHROMA
SC AMP
CARRIER BALANCE
SC PHASE
Q01～03 CLAMP, AMP
Q04 BLK
FROM EVF
CHARACTER SIGNAL
L VTR TRIGGER, RUN & BATTERY ALARM BOARD
Q11,Q12 VIDEO IN / OUT
Q01 R INDICATE DRIVE
IC01 BATT. ALARM
ALARM SET
SW261
VTR ON/OFF
TO EVF CONNECTOR
TAPE RUN
CN01 CAMERA CONNECTOR (10 PIN)
VIDEO IN/OUT
TAPE RUN
VTR ON/OFF
AUDIO(R)
VTR TRIGGER
AUDIO(L)
GND
+12V IN
M MIC AMP BOARD
J01 MIC JACK
Q01 AMP
Q02 AMP
S/M SELECT SW
SW01
MONO
STEREO
MIC POWER
C CARRIER MATRIX BOARD
Q06 4.1MHz AMP
T02 4.1MHz BPT
Q07 AMP
Q01～Q05 8.2MHz AMP
T03 8.2MHz BPT
IC01 AMP & LIMITER
MULTI
PHASE SET-1
PHASE SET-2
DC SET
DELAY
Q08 AMP
Q09 AMP
D DETECTOR BOARD
LC FILTER
BLK & SH COMP.
DET
Q01 BUFFER
Q03 B BLK
Q02 BUFFER
R GAIN
B' GAIN
E BLACK SET/AUTO WHITE BOARD
Q01,Q02 LPF
M51263P
SLICE 1
SLICE 2
YL AMP
R AMP
B AMP
IC01
IC02
IC03
A/W R PRESET
A/W B PRESET
A/W R GAIN
A/W B GAIN
F COLOR γ BOARD
M51264P
G-IN GAIN
VCA
FB CLAMP
SUPP-RESS
Q01～Q04 R-Y Y-B MATRIX
B GAIN
R GAIN
WB-B
WB-R
R AWB CTL.
B AWB CTL.
AUTO
AW SELECT
SW241
BATT. ALARM
G CDP BOARD
Q01 BUFFER
IC01 CCD
Q02 BUFFER
LPF
R CH ADD
ADD
SUB
B CH ADD
Q03 BUFFER
IC02 CCD
Q04 BUFFER
R-Y GAIN
Y-B GAIN
OUT DOOR LED
IN DOOR LED
TO EVF CONNECTOR
A AUDIO BOARD
NF
AMP
IC01
ALC
Q01 BUFFER
R INDICATE
R OUT
L OUT
FADER CTL
K SSG BOARD
SC FREQ.
IC01 SSG
fH OSC
C HD
VD
SC(180°)
SC(90° (90°270°))
LINE SW
C SYNC
C BLK
BFP
SC BLK
GP
CP
CP+D·HD
B.BLK
IC261 IRIS BUFFER AMP
IRIS LEVEL
Q231 FADER
SW231
FADER SW
FADER CTL
AUDIO FADER CTL
IC201 VTR TRIGGER
Q201 VTR TRIGGER
VTR SELECT
SW201
AUTO IRIS LEVEL
BIAS LIGHT BAL.
BIAS LIGHT LEVEL
IRIS LEVEL
TO EVF CONNECTOR
SW REG.
Q261 REG.
5V ADJ.
5V REG.
IC261
8.7V to DEF & HV
MOTHER BOARD
Q102 Q105 V PB
Q101 V SAW
Q103 SW
Q104 BUFFER
IC101
DY FOCUS
PHASE SH COMP.
H BL COMP.-Y
V BL COMP.-Y
H BL COMP.-R
H BL COMP.-B
SH COMP.-R
SH COMP.-B
V BL COMP.-R
V BL COMP.-B
IC102
IC103
TO DEF BOARD
ZOOM (T)
ZOOM (W)
SW301 ZOOM T
SW302 ZOOM W
Q312 V WAVE FORMER
IC301 1/2 V AMP & V OUT
V.HEIGHT
V.CENTER
H.CENTER
H.LIN-1
H.LIN-2
H.LIN-3
IC301 2/2 Q309,Q311 H DEF OUT
WIDTH
TARGET
Q301～302 H OUT
HVT
Q303 DYNAMIC FOCUS
Q304 B. BLK
Q305 K SET
Q306～309 COMPA-RATOR
Q308 G1 DRIVE
DSO GAIN
DEF & HV BOARD
DY01 DEF. YOKE
TUBE SOCKET
VTR SW
SW101
VTR S/S
BIAS LIGHT
PL02
PL01
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10

8-1 CIRCUIT DIAGRAM OF MOTHER BOARD(GX-N7U-UT)

- CA-1071C


DY01 DEF YOKE
DEF & HV
Q304 2SB792(Q-T) B.BLK
Q306～Q308 2SB792(Q-T) DSO
T301 HV BLOCK
Q309 2SD601(Q,R)
Q311 2SB709(Q,R)
Q301 2SD601(Q,R) H.DRIVE
Q302 2SD781 H.OUT
IC301 NJM3414D V.AMP & V.OUT
IC301 NJM3414D H.AMP
TUBE SOCKET
V01 S4250 PICK UP TUBE
CA-M003A MIC BOARD
Q01,Q02 2SC2778
CN02 EVF CONNECTOR
IC201 μPD4013BG or MN4013BS VTR TRIGGER
Q201 BUFFER
BIAS LIGHT
CA-8071A
CA-9071A
VTR START/STOP
Q231 FADER CONTROL
IC261 IRIS BUFFER
Q101 BUFFER
Q104 BUFFER
IC101～IC103 μPC4741G SHADING COMPENSATION
Q261 2SB970 (Q-S) REG. VTR 5VREG
SW REG.
AUDIO & LENS CONN
PREPROCESS
CARRIER MATRIX
DETECTOR
BLACK SET & AUTO WHITE
COLOR GAMMA
CDP
AGC
ENCODER
SSG
CA-1071C MOTHER BOARD
(NOTE) POWER SUPPLY VOLTAGE +12V +8.7V +5.5V +5V
A B C D E F
1 2 3 4 5 6 7 8 9 10



8-2 BOARD DIAGRAM OF MOTHER BOARD

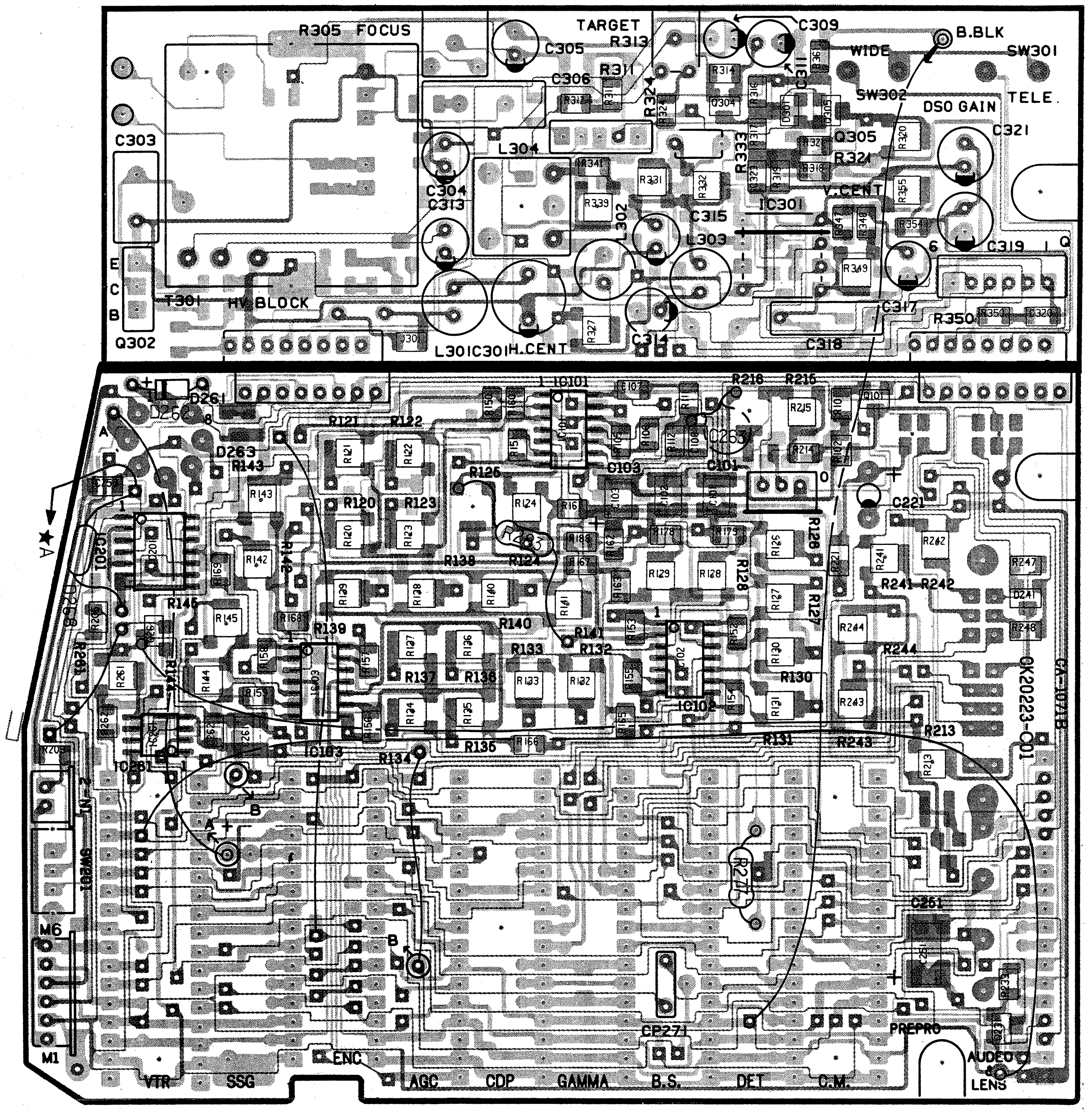
- CA-1071C

*Note: ▨ Red color shows top side pattern of PC BOARD.

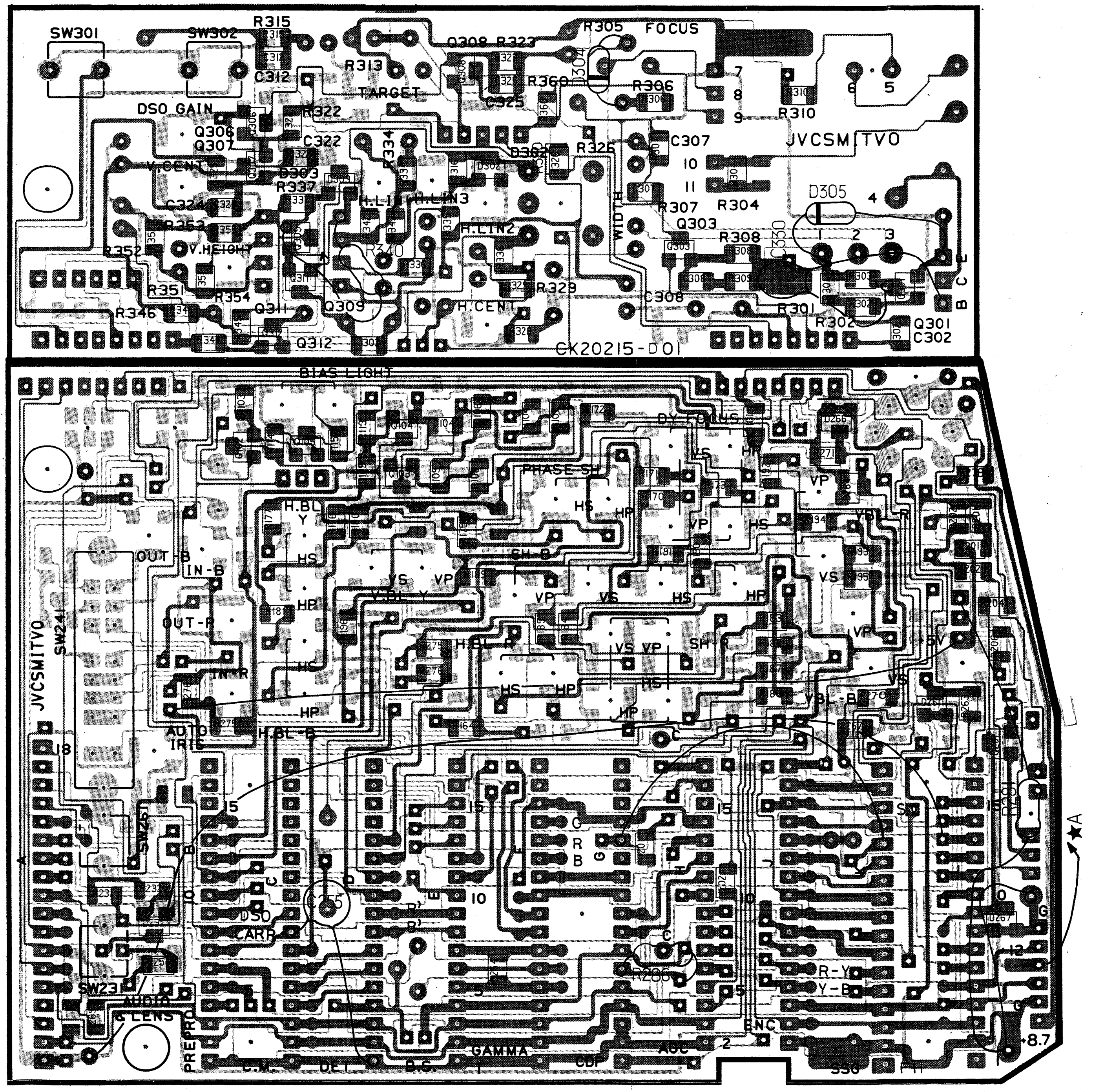
▨ Gray color shows bottom side pattern of PC BOARD.

FRONT

FRONT


R305 FOCUS
TARGET
C309
B.BLK
SW301
WIDE
SW302
DSO GAIN
TELE.
C303
L304
IC301
V.CENT
T301
HV BLOCK
Q302
L301
H.CENT
IC101
IC102
IC103
CK20223-C01
CA-1071B
VTR
SSG
ENC
AGC
CDP
GAMMA
B.S.
DET
C.M.
PREPRO
AUDIO & LENS
M6
M1

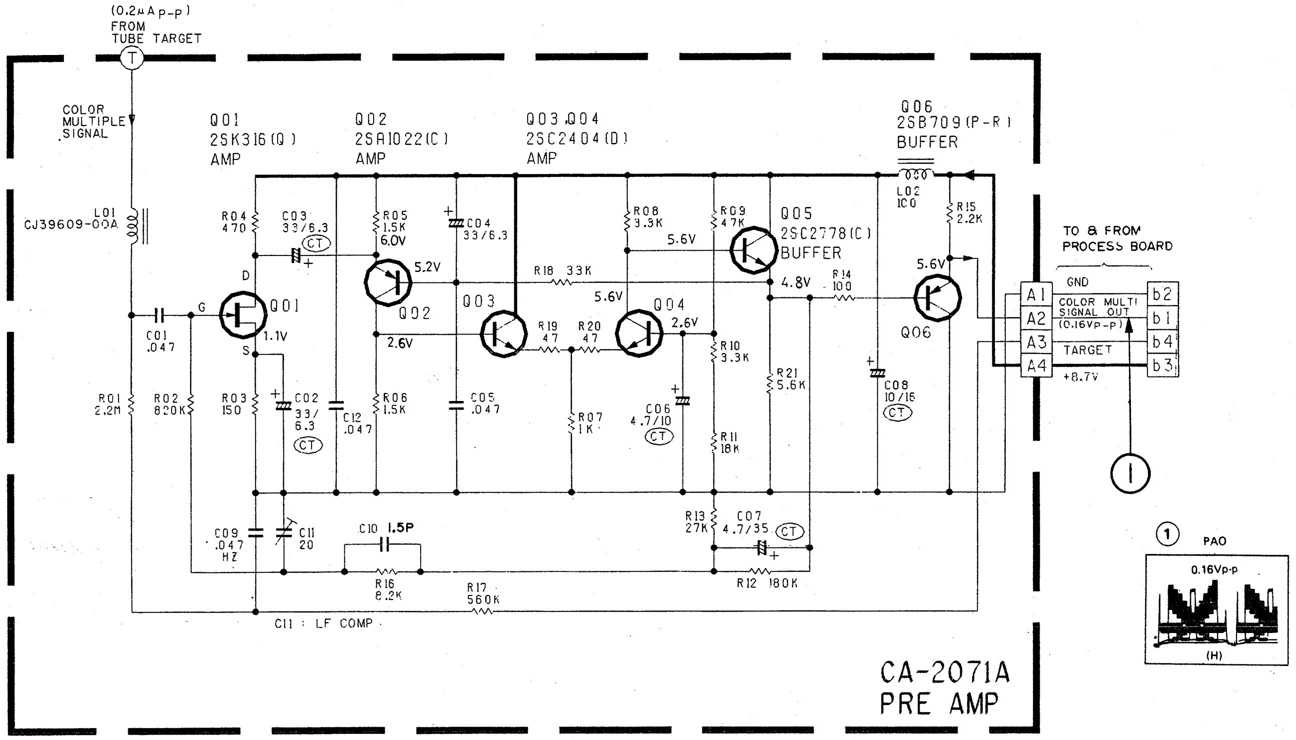
TOP VIEW


SW301
SW302
R315
R305 FOCUS
TARGET
DSO GAIN
V.CENT
V.HEIGHT
H.LIN1
H.LIN3
H.LIN2
H.CENT
WIDTH
JVCSMITVO
D305
Q301
C302
CK20215-D01
BIAS LIGHT
DY FOCUS
PHASE SH
OUT-B
IN-B
OUT-R
IN-R
SW241
SW231
AUTO IRIS
DSO CARR
PREPRO
C.M.
DET
B.S.
GAMMA
CDP
AGC
ENC
SSG
VTR
R-Y
Y-B
8.7

BOTTOM VIEW

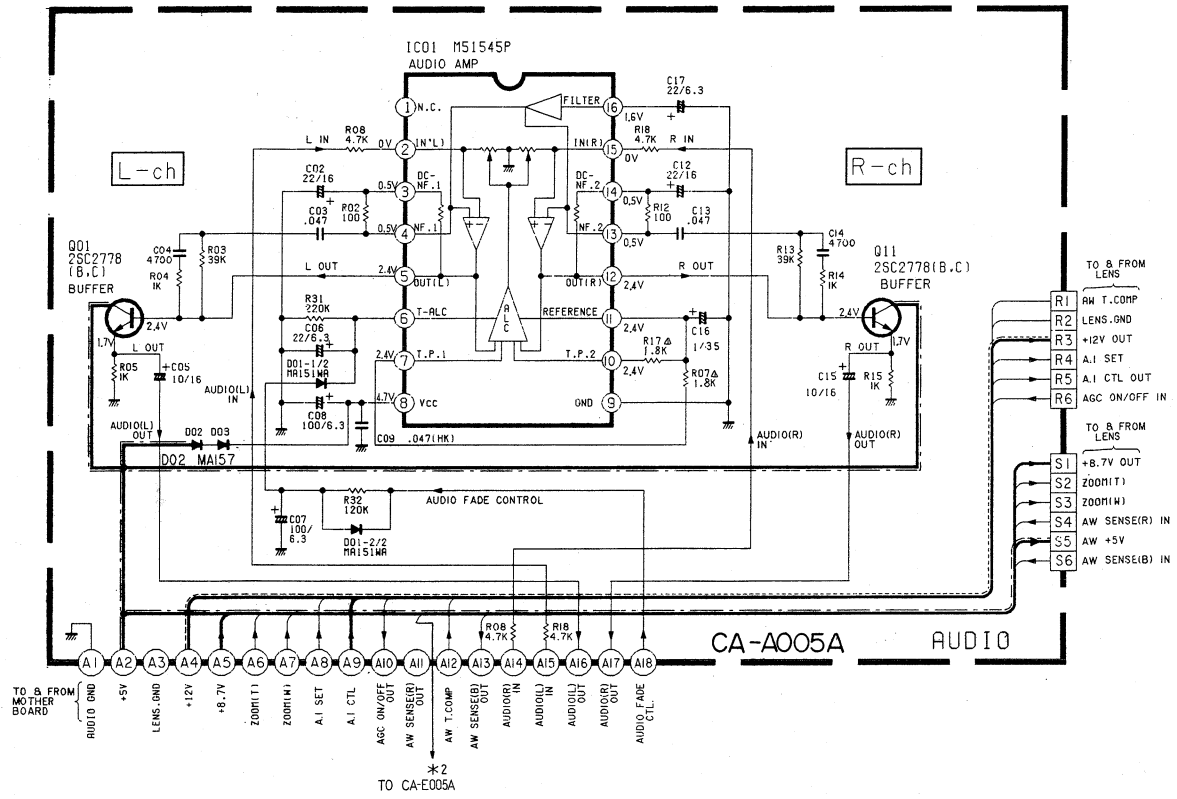
9-1 CIRCUIT DIAGRAM OF PRE-AMP

- CA-2071A


(0.2μA p-p)
FROM
TUBE TARGET
COLOR MULTIPLE SIGNAL
L01
CJ39609-00A
Q01
2SK316(Q)
AMP
Q02
2SA1022(C)
AMP
Q03, Q04
2SC2404(D)
AMP
Q06
2SB709(P-R)
BUFFER
Q05
2SC2778(C)
BUFFER
TO & FROM PROCESS BOARD
GND
COLOR MULTI SIGNAL OUT (0.16Vp-p)
TARGET
+8.7V
A1
A2
A3
A4
b2
b1
b4
b3
CT
C11 : LF COMP
CA-2071A
PRE AMP
① PAO
0.16Vp-p
(H)

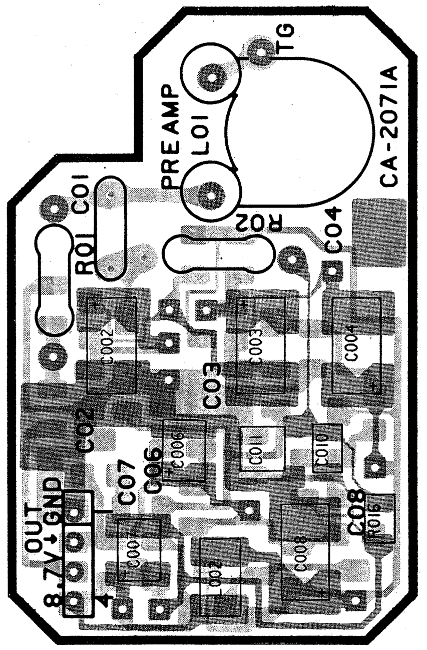
10-1 CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ

- CA-A005A


IC01 M51545P
AUDIO AMP
L-ch
R-ch
Q01
2SC2778
(B.C)
BUFFER
Q11
2SC2778(B.C)
BUFFER
FILTER
N.C.
IN(L)
IN(R)
NF.1
NF.2
OUT(L)
OUT(R)
T-ALC
REFERENCE
T.P.1
T.P.2
VCC
GND
D02 MA157
D01-1/2
MA151WA
D01-2/2
MA151WA
AUDIO FADE CONTROL
TO & FROM LENS
R1 AW T.COMP
R2 LENS.GND
R3 +12V OUT
R4 A.I SET
R5 A.I CTL OUT
R6 AGC ON/OFF IN
TO & FROM LENS
S1 +8.7V OUT
S2 ZOOM(T)
S3 ZOOM(W)
S4 AW SENSE(R) IN
S5 AW +5V
S6 AW SENSE(B) IN
CA-A005A
AUDIO
TO & FROM MOTHER BOARD
A1 AUDIO GND
A2 +5V
A3
A4 LENS.GND
A5 +12V
A6 +8.7V
A7 ZOOM(T)
A8 ZOOM(W)
A9 A.I SET
A10 A.I CTL
A11 AGC ON/OFF OUT
A12 AW SENSE(R) OUT
A13 AW T.COMP
A14 AW SENSE(B) OUT
A15 AUDIO(R) IN
A16 AUDIO(L) IN
A17 AUDIO(L) OUT
A18 AUDIO(R) OUT
AUDIO FADE CTL
*2
TO CA-E005A

9-2 BOARD DIAGRAM OF PRE-AMP

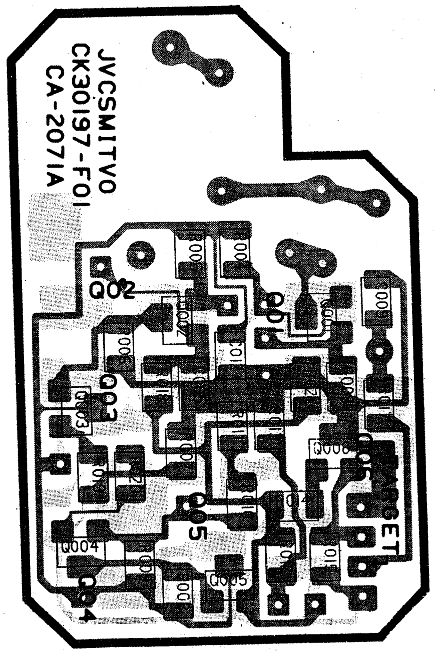
- CA-2071A


PREAMP
L01
TG
CA-2071A
C01
R01
R02
C04
C02
C03
C07
C06
C08
OUT
8.7V
GND

TOP VIEW

▨ Top side pattern of PC BOARD.

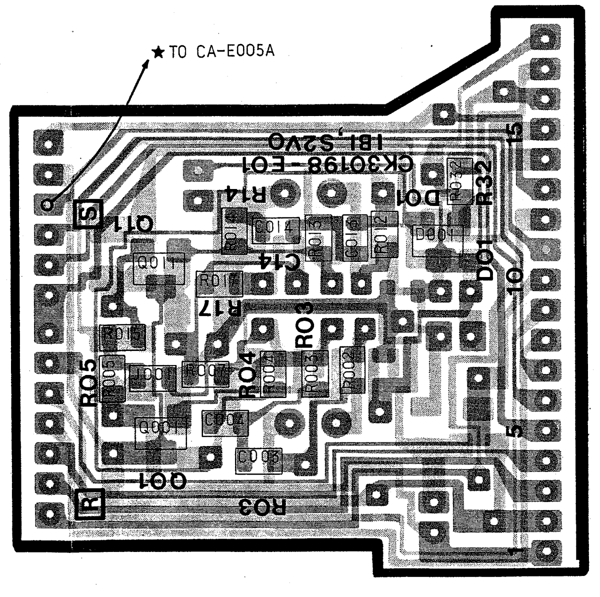
■ Bottom side pattern of PC BOARD.


JVCSMITVO
CK30197-F01
CA-2071A
Q02
Q03
Q05
Q04
TARGET

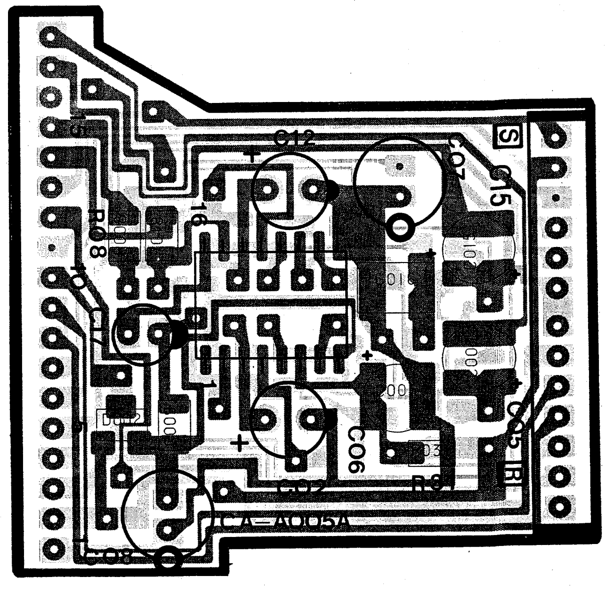
BOTTOM VIEW

10-2 BOARD DIAGRAM OF AUDIO BOARD Ⓐ

- CA-A005A


★TO CA-E005A
CK30198-E01
IBI S2V0
S
R
Q11
R14
C14
R17
R03
R04
R05
Q01
R32
D01
10
15
5

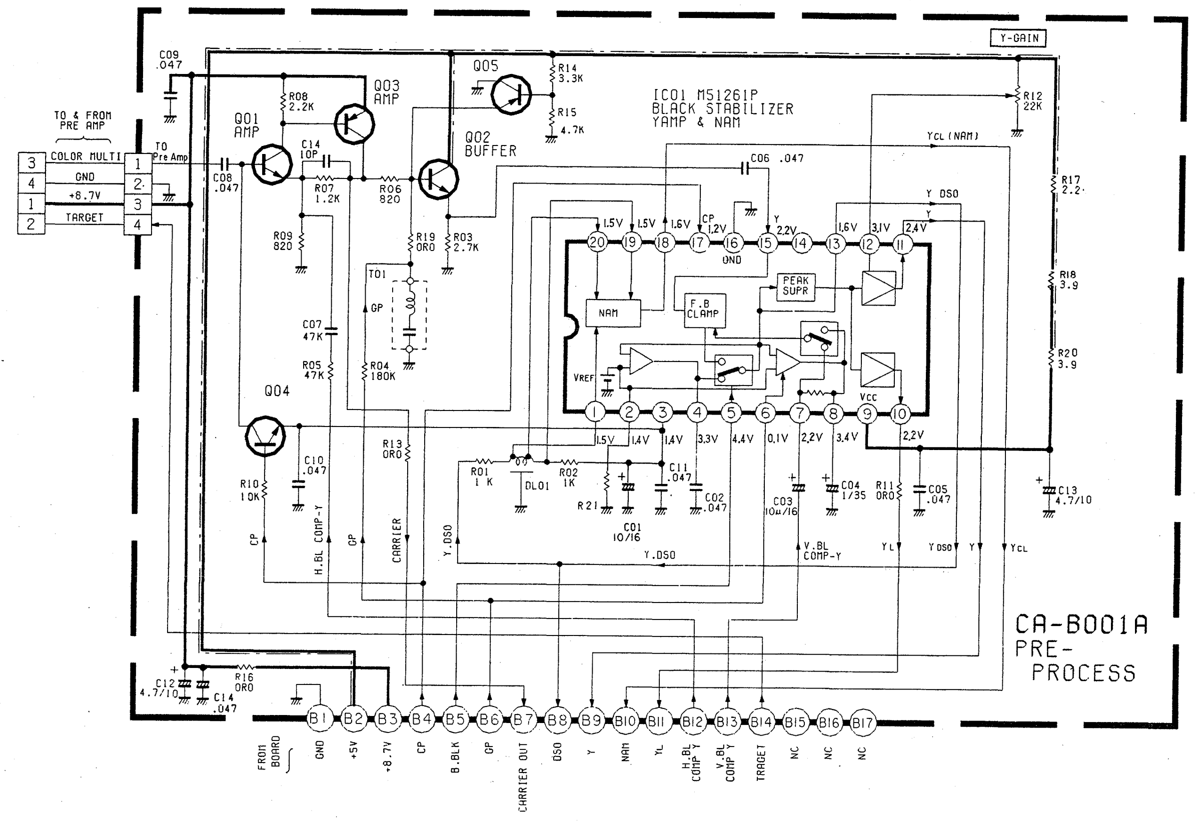
TOP VIEW


S
R
C12
C15
C06
CA-A005A

BOTTOM VIEW

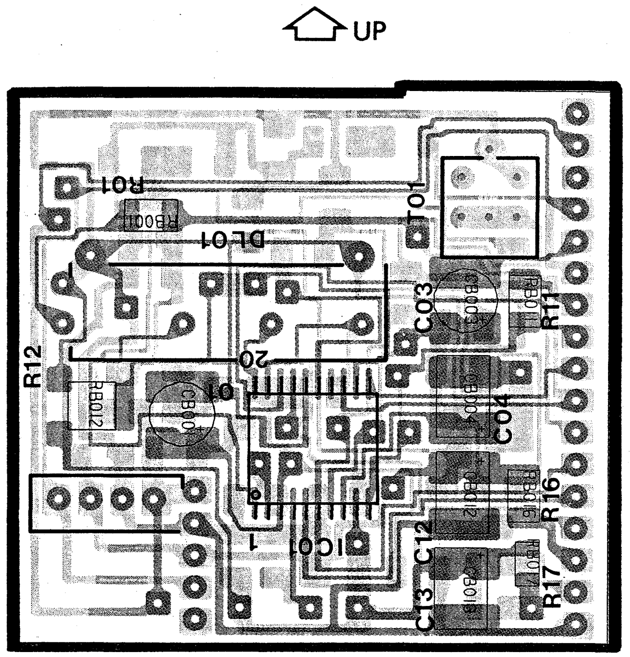
11-1 CIRCUIT DIAGRAM OF PRE-PROCESS BOARD Ⓑ

- CA-B001A

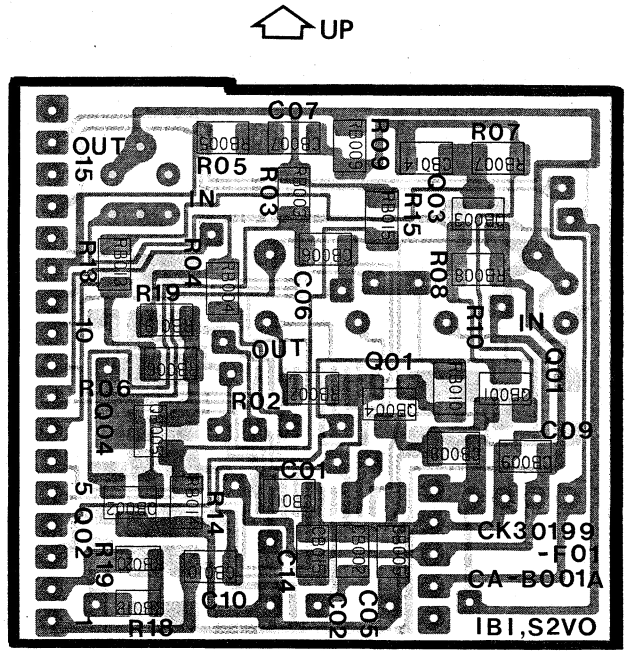

Y-GAIN
TO & FROM PRE AMP
COLOR MULTI
GND
+8.7V
TARGET
Q01 AMP
Q03 AMP
Q05
Q02 BUFFER
Q04
IC01 M51261P BLACK STABILIZER YAMP & NAM
NAM
F.B CLAMP
PEAK SUPR
VREF
VCC
T01
DL01
YCL (NAM)
Y OSD
CA-B001A PRE-PROCESS
FROM BOARD
GND
+5V
+8.7V
CP
B.BLK
GP
CARRIER OUT
OSD
Y
NAM
YL
H.BL COMP-Y
V.BL COMP-Y
TARGET
NC
NC

11-2 BOARD DIAGRAM OF PRE-PROCESS BOARD Ⓑ

- CA-B001A



TOP VIEW


UP
CK30199 -F01
CA-B001A
IB1,S2VO

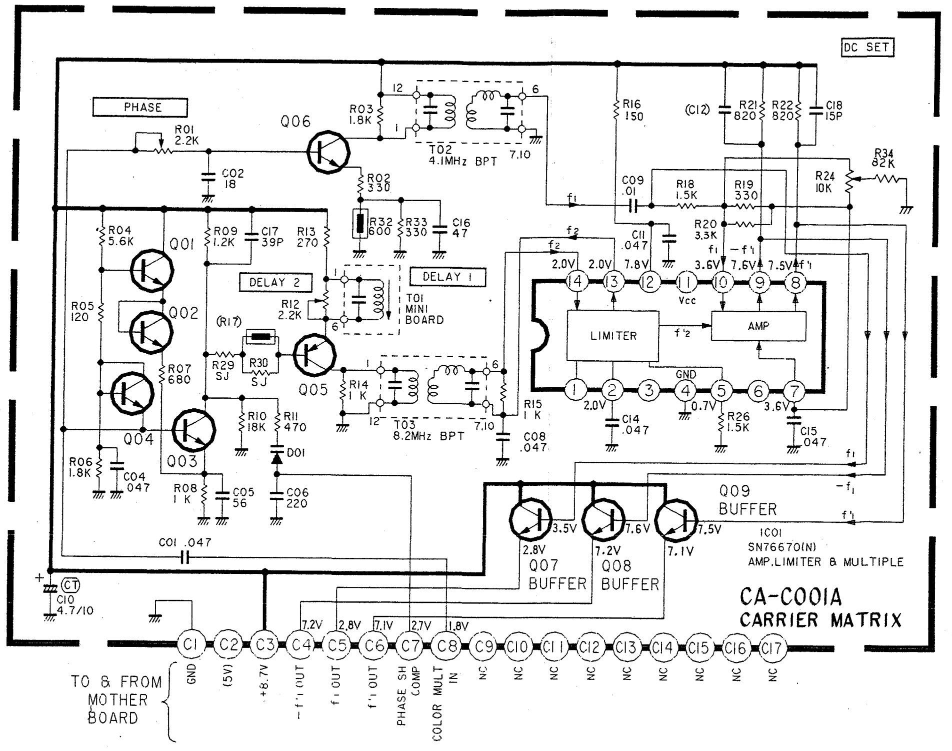
BOTTOM VIEW

▨ Top side pattern of PC BOARD.

■ Bottom side pattern of PC BOARD.

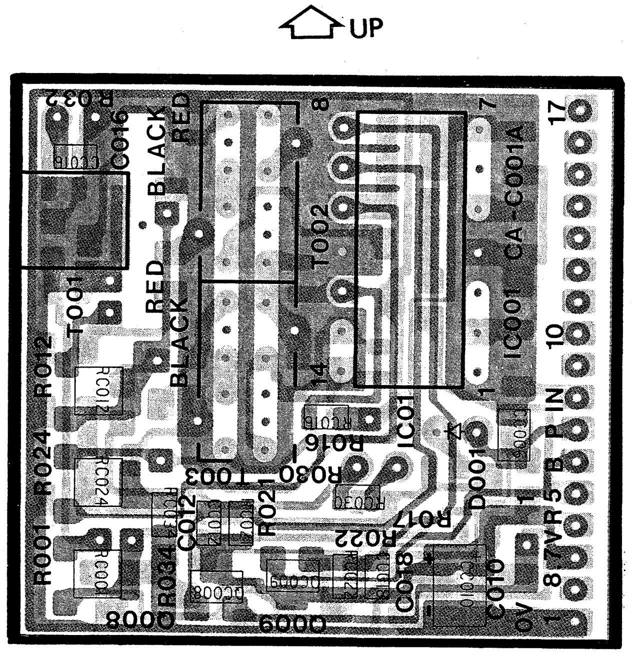
12-1 CIRCUIT DIAGRAM OF CARRIER MATRIX BOARD Ⓒ

- CA-C001A

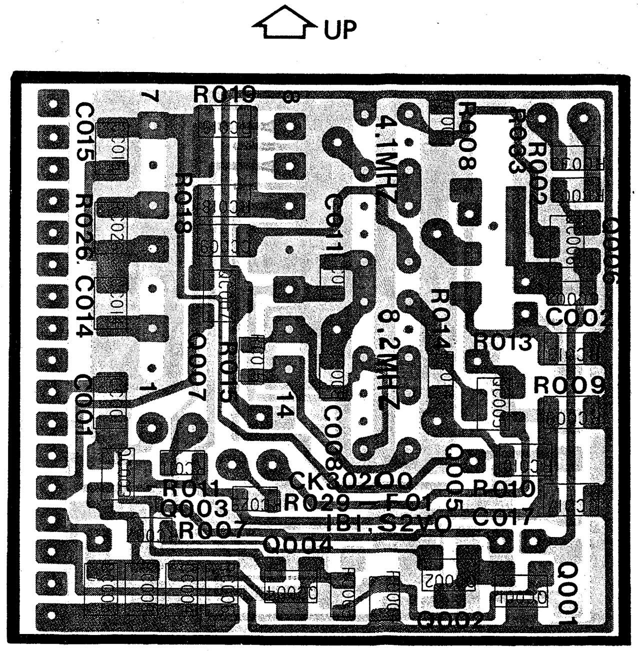

DC SET
PHASE
Q06
Q01
Q002
Q004
Q003
Q05
T02 4.1MHz BPT
T03 8.2MHz BPT
DELAY 2
DELAY 1
T01 MINI BOARD
LIMITER
AMP
Q07 BUFFER
Q08 BUFFER
Q09 BUFFER
IC01 SN76670(N) AMP,LIMITER & MULTIPLE
CA-C001A CARRIER MATRIX
TO & FROM MOTHER BOARD
GND
(5V)
+8.7V
f₁ OUT
f₁ OUT
f₁ OUT
PHASE SH COMP
COLOR MULT
IN
NC

12-2 BOARD DIAGRAM OF CARRIER MATRIX BOARD Ⓒ

- CA-C001A


UP
CA-C001A
IC001
RED
BLACK

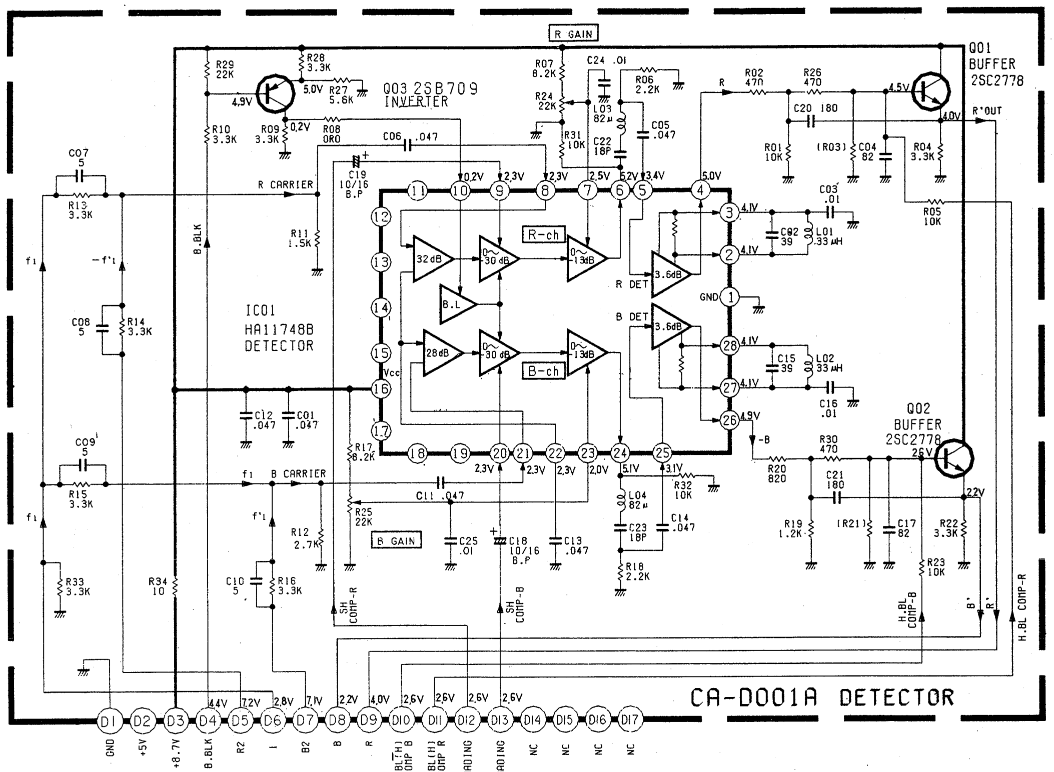
TOP VIEW


UP
4.1MHz
8.2MHz
CK30200 -F01
IB1,S2VO

BOTTOM VIEW

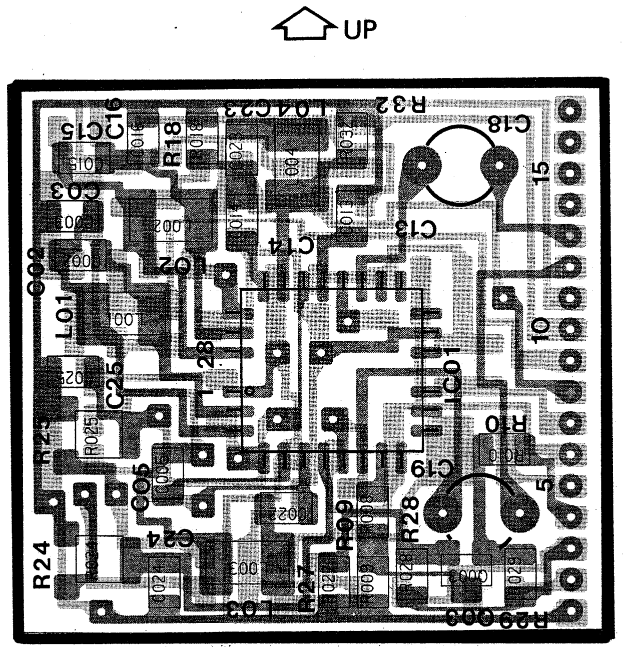
13-1 CIRCUIT DIAGRAM OF DETECTOR BOARD Ⓓ

- CA-D001A

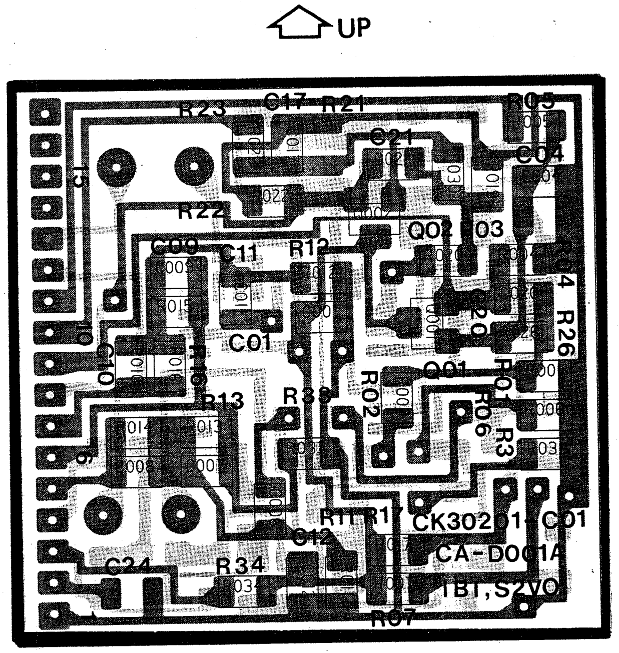

CA-D001A DETECTOR
IC01 HA11748B DETECTOR
Q01 BUFFER 2SC2778
Q02 BUFFER 2SC2778
Q03 2SB709 INVERTER
R GAIN
B GAIN
R CARRIER
B CARRIER
R-ch
B-ch
R DET
B DET
32dB
28dB
30dB
13dB
3.6dB
R'OUT
SH COMP-R
SH COMP-B
H.BL COMP-B
H.BL COMP-R
GND
+5V
+8.7V
B.BLK
R2
I
B2
B
R
BL(H) COMP B
BL(H) COMP R
SHADING
SHADING
NC
NC
NC
NC
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D17

13-2 BOARD DIAGRAM OF DETECTOR BOARD Ⓓ

- CA-D001A


UP
IC01
Q01
Q02
Q03
L01
R18
R32
C18
C13
C14
C19
R10
R28
R24
R25
15
10
5

TOP VIEW

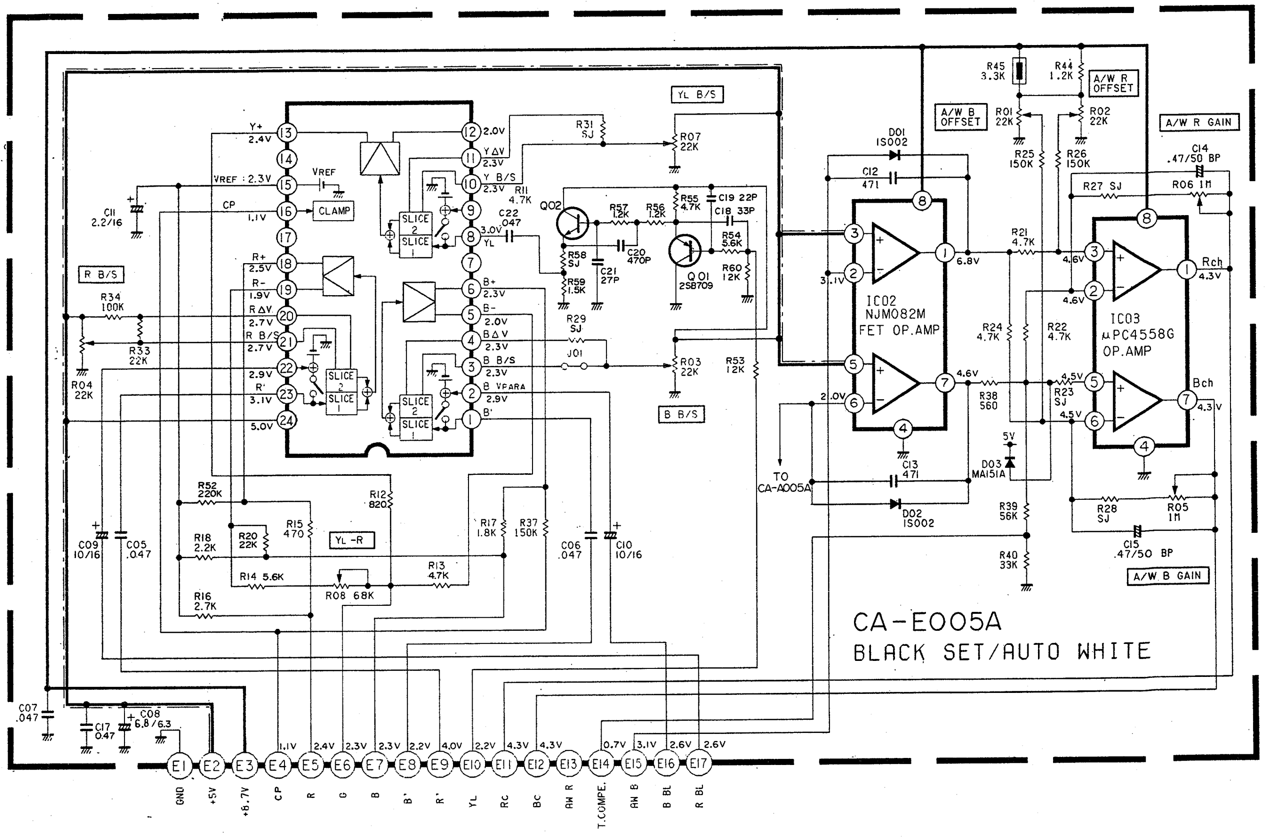

UP
R23
C17
R21
R22
C09
C11
R12
Q02
Q03
C01
R13
R30
R02
Q01
R06
R3
C24
R34
R11
R17
CK302
CA-D001A
1B1,S2V0
C01
R07

BOTTOM VIEW

▨ Top side pattern of PC BOARD.
▨ Bottom side pattern of PC BOARD.

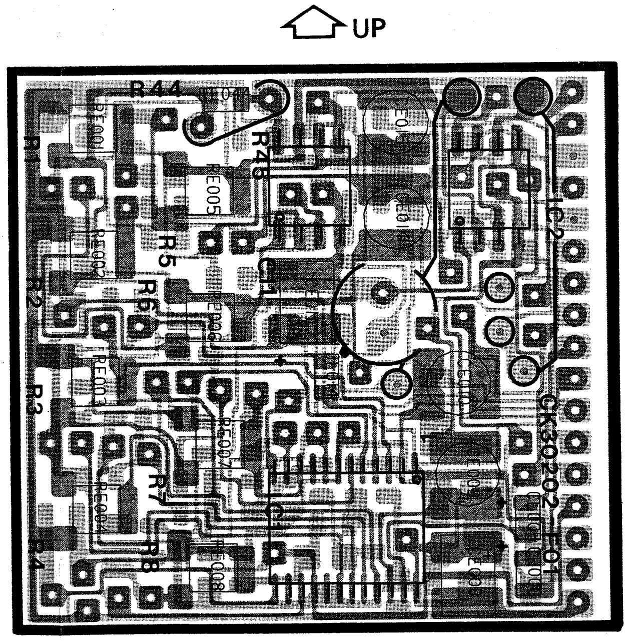
14-1 CIRCUIT DIAGRAM OF BLACK SET/AUTO WHITE BOARD Ⓔ

- CA-E005A

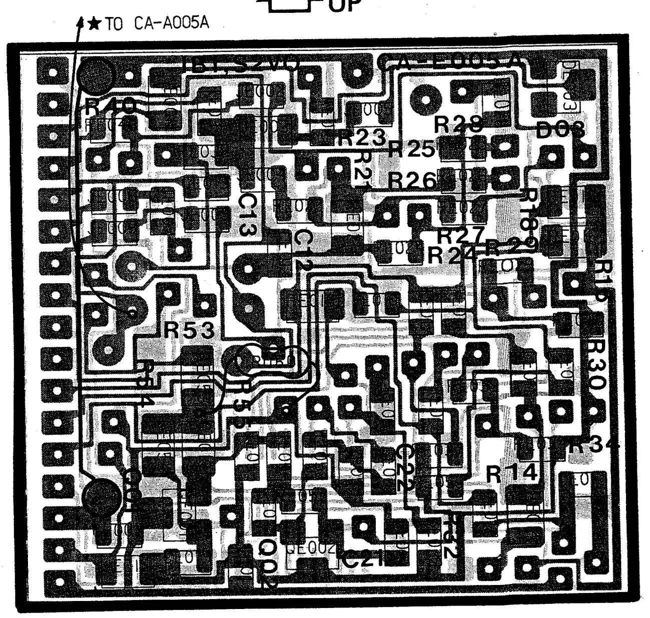

CA-E005A
BLACK SET/AUTO WHITE
IC02 NJM082M FET OP.AMP
IC03 μPC4558G OP.AMP
Q01 2SB709
Q02
D01 1S002
D02 1S002
D03 MA151A
YL B/S
R B/S
B B/S
YL-R
A/W B OFFSET
A/W R OFFSET
A/W R GAIN
A/W B GAIN
CLAMP
SLICE
VREF
Rch
Bch
TO CA-A005A
GND
+5V
+8.7V
CP
R
G
B
B'
R'
YL
Rc
Bc
AW R
T.COMPE.
AW B
B BL
R BL
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E12
E13
E14
E15
E16
E17

14-2 BOARD DIAGRAM OF BLACK SET/AUTO WHITE BOARD Ⓔ

- CA-E005A


UP
R44
R46
R1
R5
R6
R2
R3
R7
R8
R4
IC2
CK3020
E01

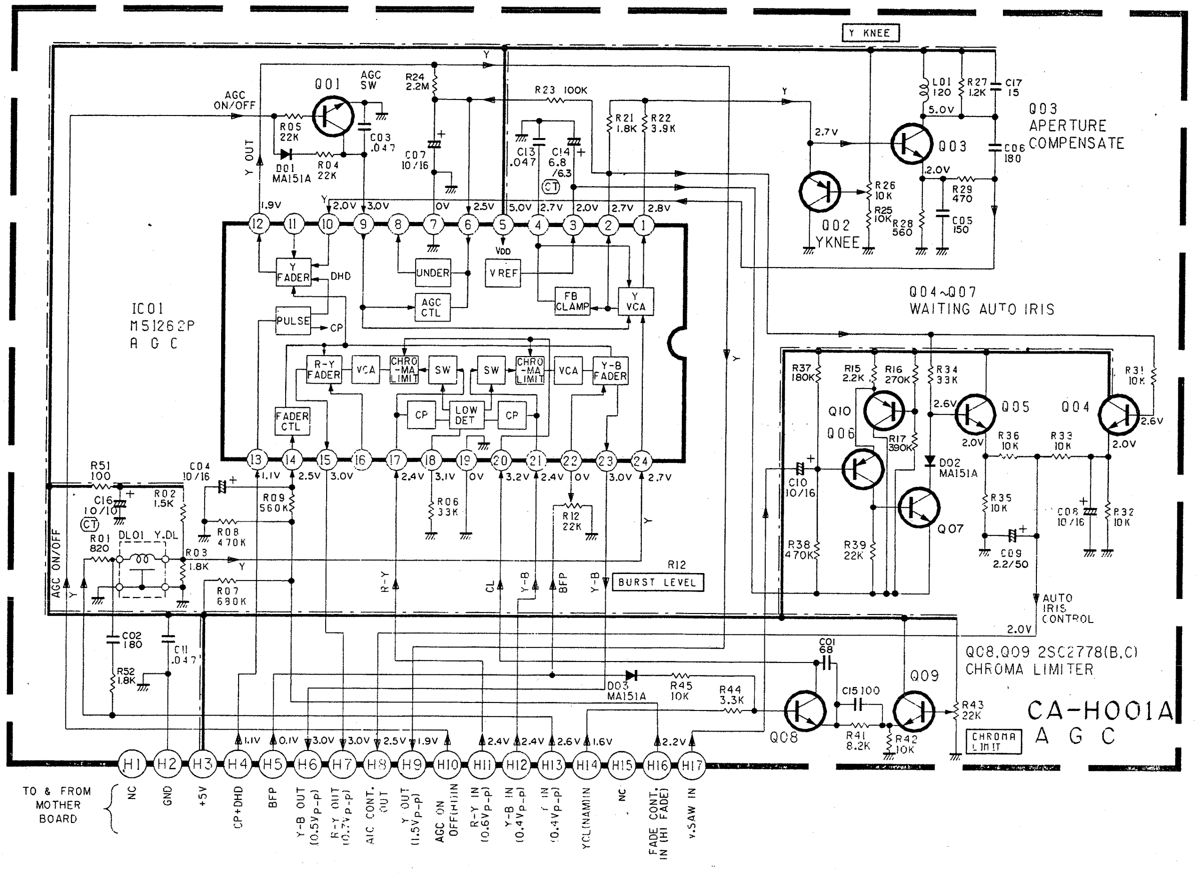
TOP VIEW


★TO CA-A005A
UP
CA-E005A
R40
R23
R25
R28
D03
R26
R27
R29
R24
C13
C12
R53
R30
R14
R34
C21
Q02

BOTTOM VIEW

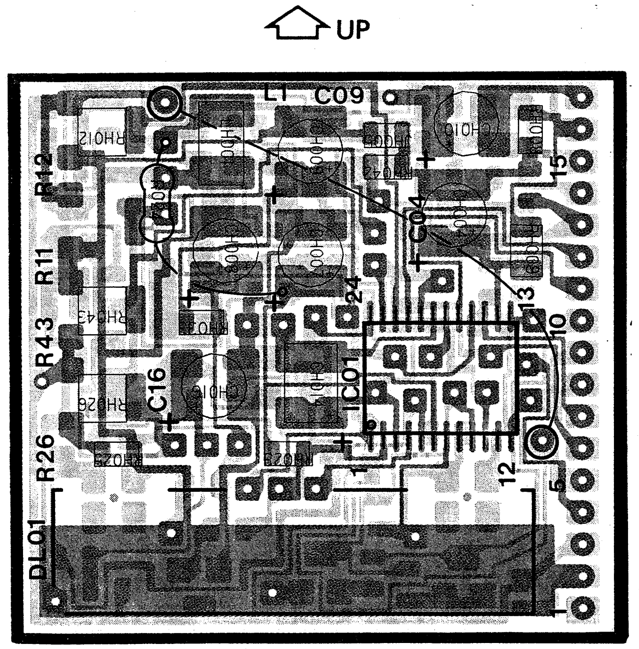
17-1 CIRCUIT DIAGRAM OF AGC BOARD Ⓗ

- CA-H001A

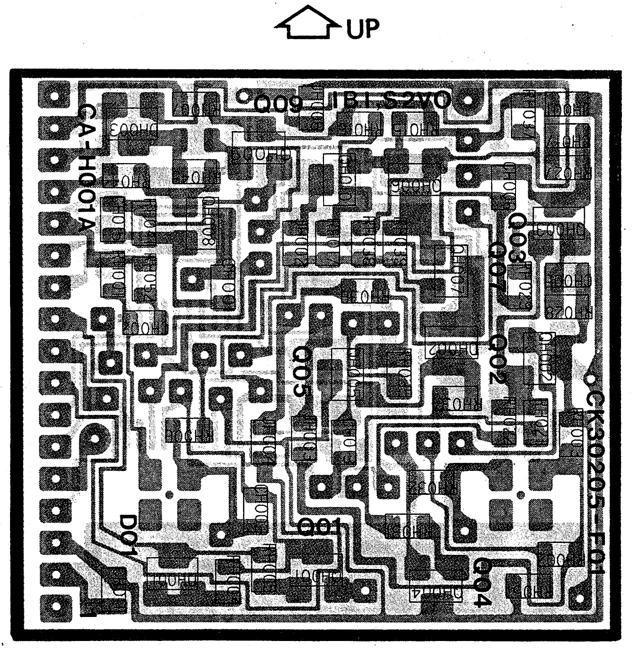

T KNEE
AGC ON/OFF
Q01 AGC SW
Y OUT
D01 MA151A
Q03 APERTURE COMPENSATE
Q02 YKNEE
IC01 M51262P AGC
Y FADER
DHD
PULSE
CP
UNDER
AGC CTL
VREF
FB CLAMP
Y VCA
R-Y FADER
VCA
CHROMA LIMIT
SW
LOW DET
Y-B FADER
FADER CTL
Q04~Q07 WAITING AUTO IRIS
Q05
Q04
Q10
Q06
Q07
D02 MA151A
AUTO IRIS CONTROL
Q08,Q09 2SC2778(B,C) CHROMA LIMITER
Q08
Q09
D03 MA151A
CHROMA LIMIT
BURST LEVEL
DL01 Y.DL
CA-H001A AGC
H1 H2 H3 H4 H5 H6 H7 H8 H9 H10 H11 H12 H13 H14 H15 H16 H17
TO & FROM MOTHER BOARD
NC
GND
+5V
CP+DHD
BFP
Y-B OUT (0.5Vp-p)
R-Y OUT (0.7Vp-p)
AIC CONT. OUT
Y OUT (1.5Vp-p)
AGC ON OFF(H)IN
R-Y IN (0.6Vp-p)
Y-B IN (0.4Vp-p)
f IN (0.4Vp-p)
YCL(NAM)IN
NC
FADE CONT. IN (HI FADE)
v.SAW IN

17-2 BOARD DIAGRAM OF AGC BOARD Ⓗ

- CA-H001A



TOP VIEW


UP
CA-H001A
CK30205-E01

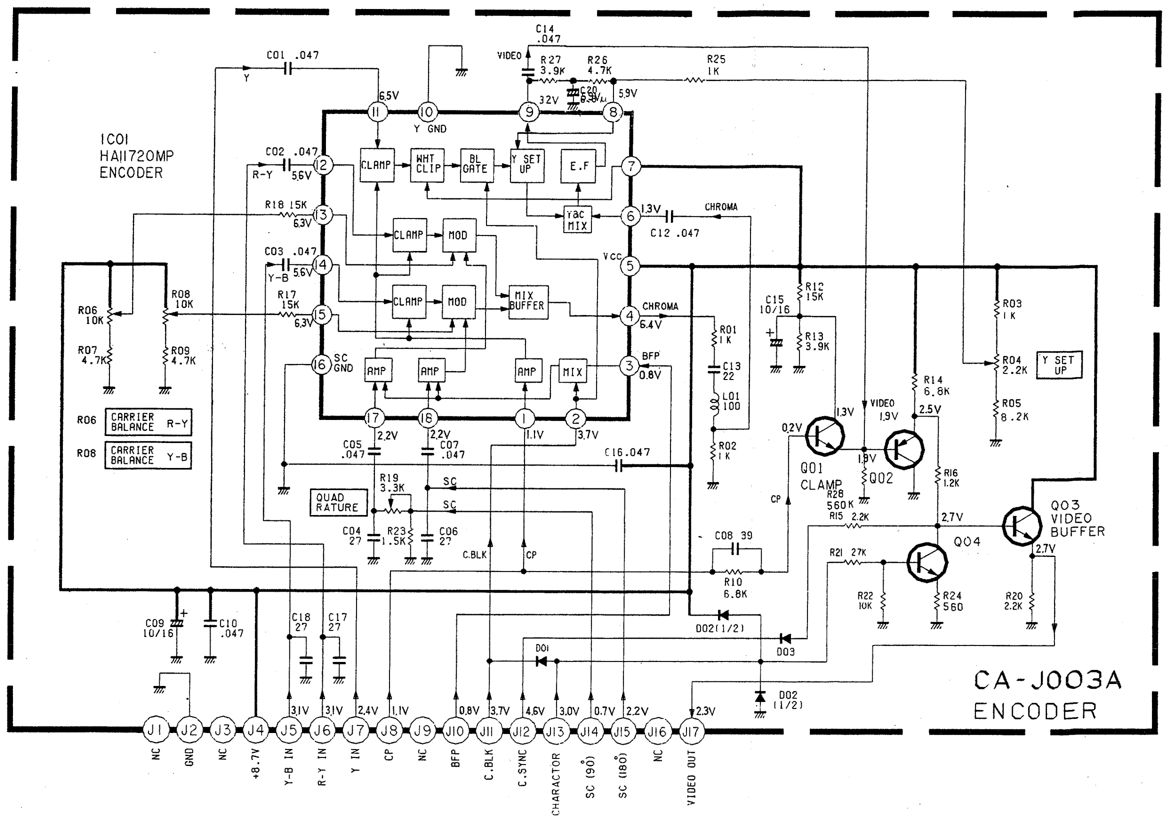
BOTTOM VIEW

▨ Top side pattern of PC BOARD.

▨ Bottom side pattern of PC BOARD.

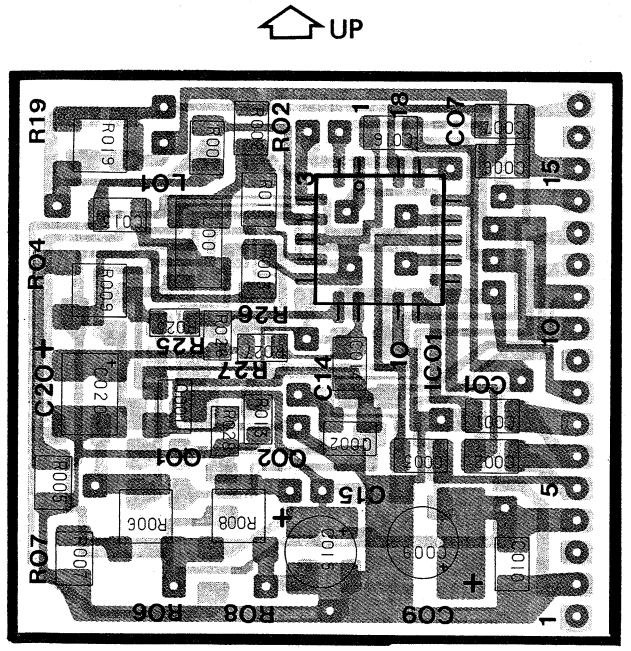
18-1 CIRCUIT DIAGRAM OF ENCODER BOARD Ⓙ

- CA-J003A

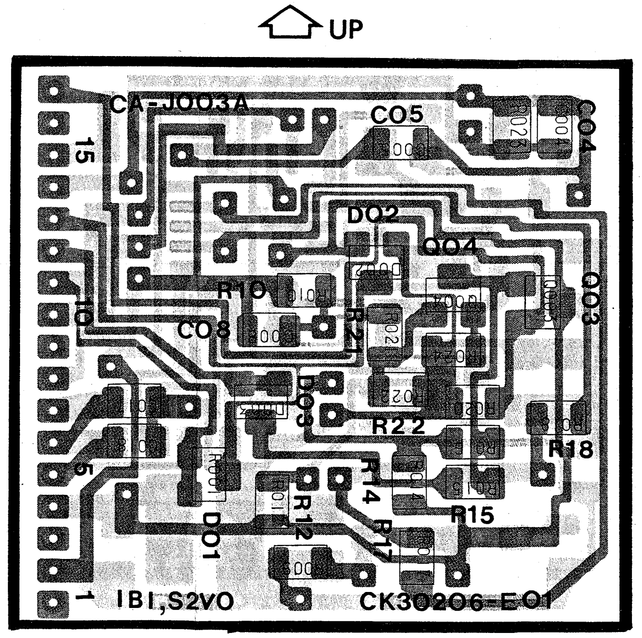

IC01 HA11720MP ENCODER
CLAMP
WHT CLIP
BL GATE
Y SET UP
E.F
Y&C MIX
MOD
MIX BUFFER
AMP
MIX
CARRIER BALANCE R-Y
CARRIER BALANCE Y-B
QUADRATURE
CHROMA
VIDEO
Y SET UP
Q01 CLAMP
Q02
Q03 VIDEO BUFFER
Q04
D01
D02(1/2)
D03
CA-J003A ENCODER
J1 J2 J3 J4 J5 J6 J7 J8 J9 J10 J11 J12 J13 J14 J15 J16 J17
NC
GND
NC
+8.7V
Y-B IN
R-Y IN
Y IN
CP
NC
BFP
C.BLK
C.SYNC
CHARACTOR
SC (90°)
SC (180°)
NC
VIDEO OUT

18-2 BOARD DIAGRAM OF ENCODER BOARD Ⓙ

- CA-J003A



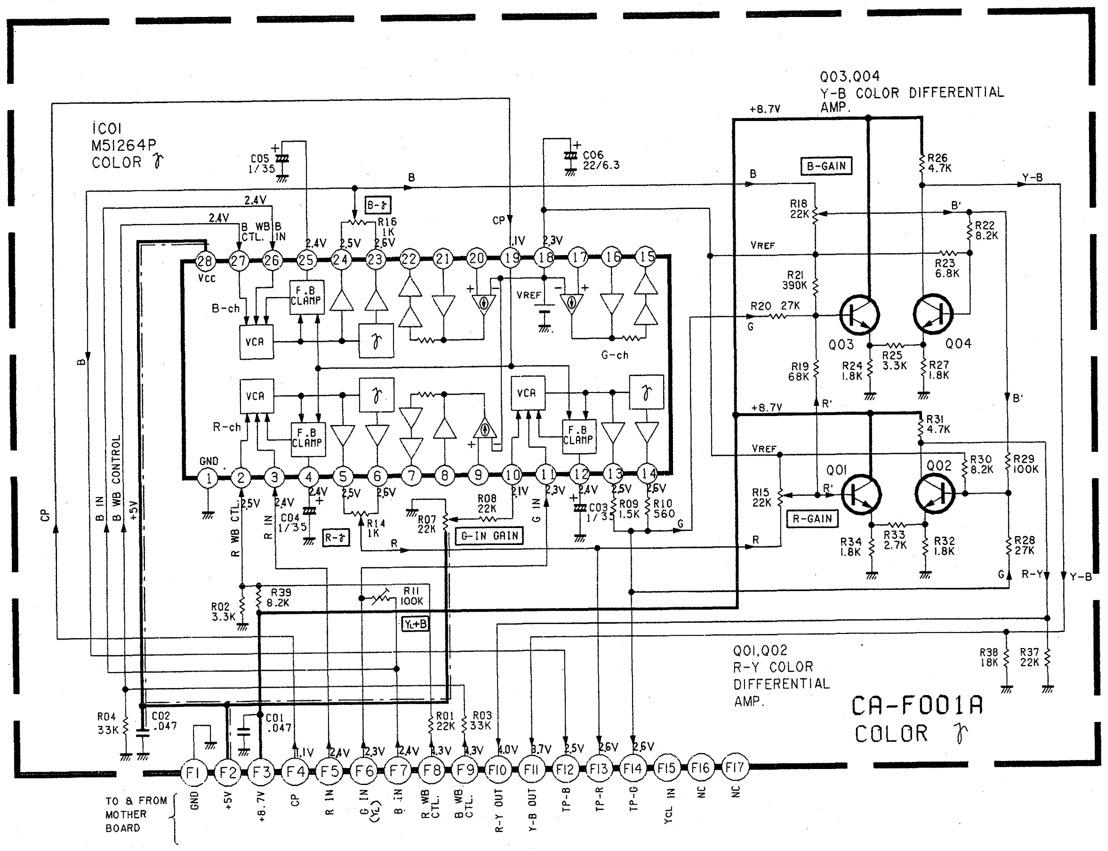
TOP VIEW


UP
CA-J003A
IBI,S2VO
CK30206-E01

BOTTOM VIEW

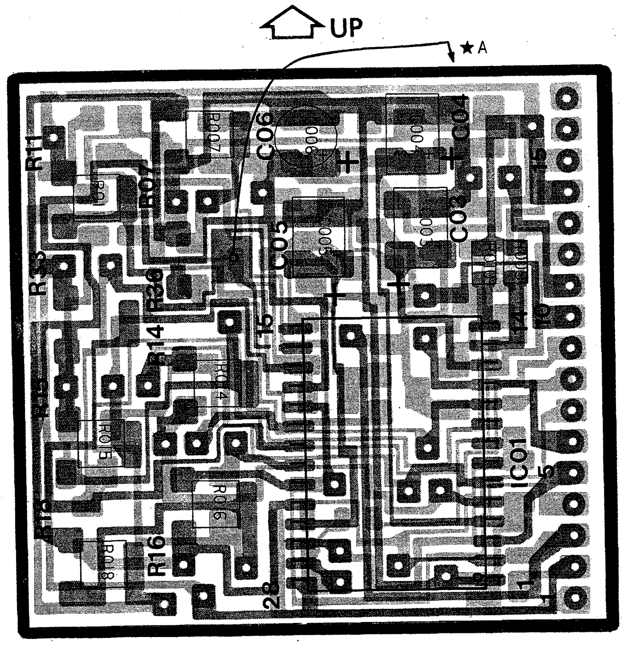
15-1 CIRCUIT DIAGRAM OF COLOR γ BOARD Ⓕ

- CA-F001A

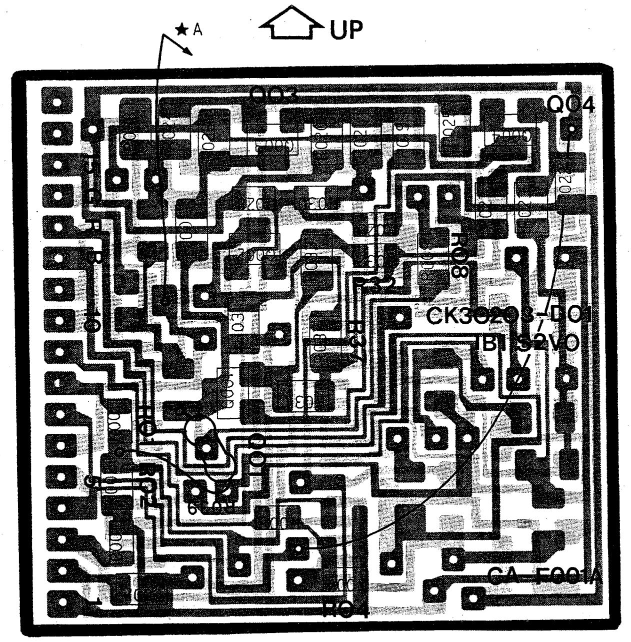

IC01
M51264P
COLOR γ
Q03,Q04
Y-B COLOR DIFFERENTIAL AMP.
Q01,Q02
R-Y COLOR DIFFERENTIAL AMP.
B-GAIN
R-GAIN
G-IN GAIN
B-ch
R-ch
G-ch
VCA
F.B CLAMP
VREF
Vcc
GND
+8.7V
CA-F001A
COLOR γ
TO & FROM MOTHER BOARD
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
F17
GND
+5V
+8.7V
CP
R IN
G IN
B IN
R WB CTL
B WB CTL
R-Y OUT
Y-B OUT
TP-R
TP-B
YCL IN
NC
NC

15-2 BOARD DIAGRAM OF COLOR γ BOARD Ⓕ

- CA-F001A


UP
★A
IC01
R11
R16
C05
C06

TOP VIEW


★A
UP
Q04
CK3020
CA-F001A

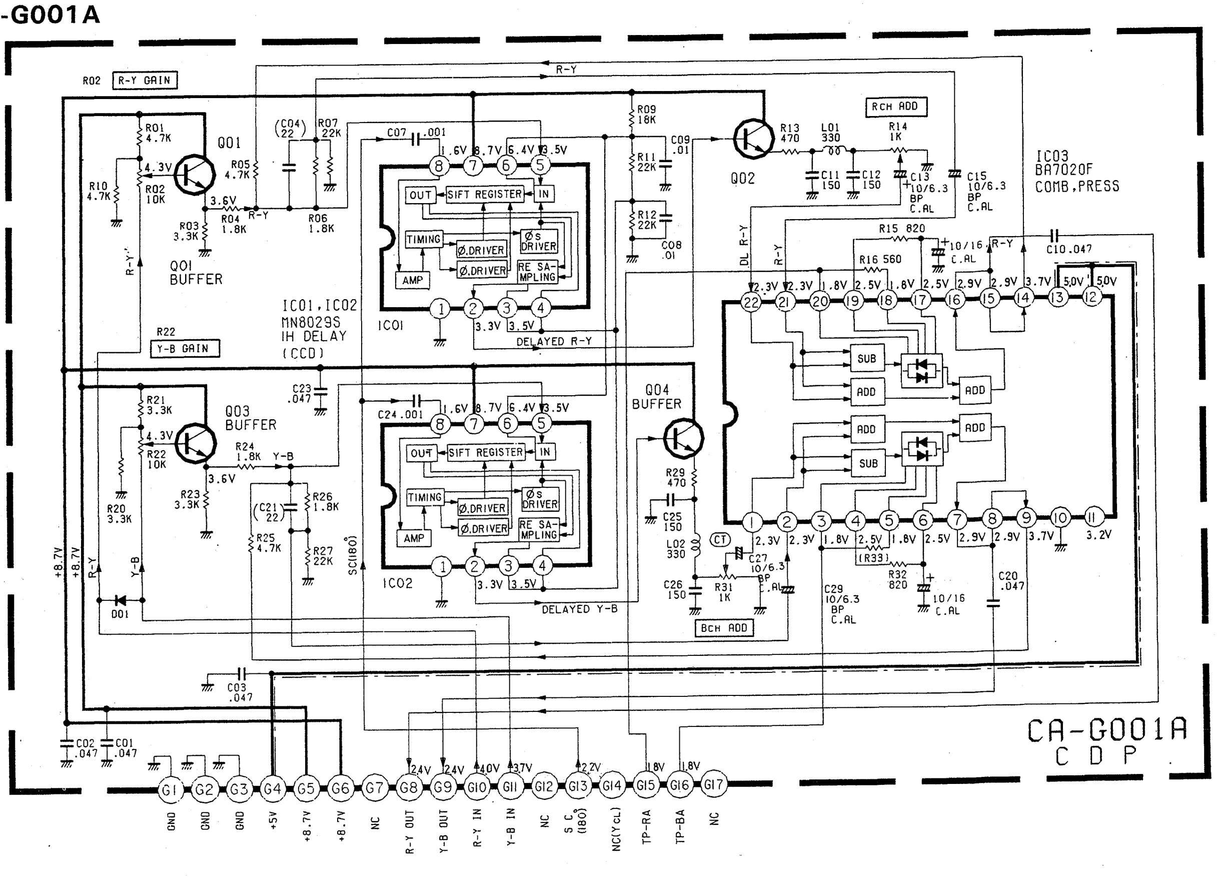
BOTTOM VIEW

▨ Top side pattern of PC BOARD.

■ Bottom side pattern of PC BOARD.

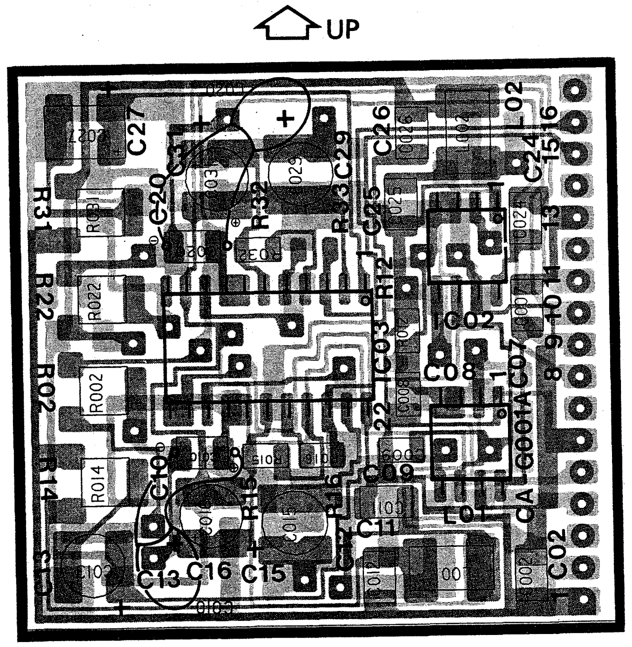
16-1 CIRCUIT DIAGRAM OF CDP BOARD Ⓖ

- CA-G001A

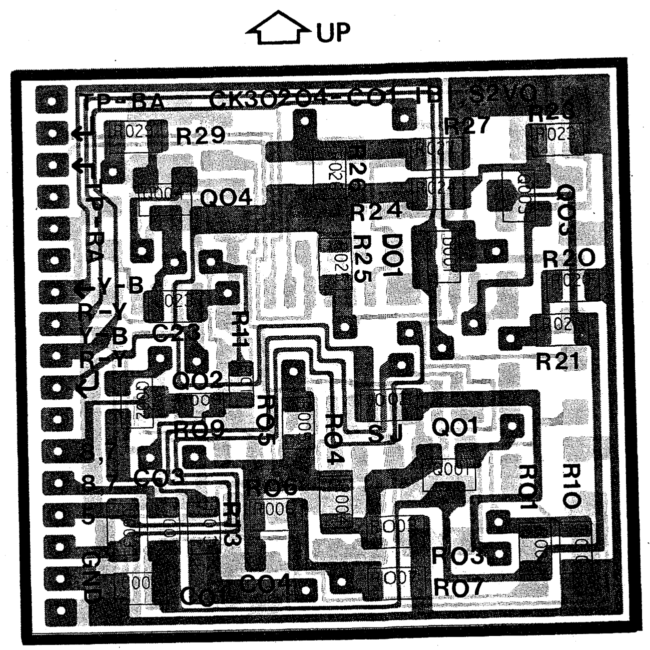

R-Y GAIN
Y-B GAIN
RCH ADD
BCH ADD
Q01 BUFFER
Q03 BUFFER
Q04 BUFFER
Q02
IC01,IC02
MN8029S
1H DELAY
(CCD)
IC03
BA7020F
COMB.PRESS
SIFT REGISTER
TIMING
Ø.DRIVER
ØS DRIVER
RE SA-MPLING
AMP
OUT
IN
DELAYED R-Y
DELAYED Y-B
SUB
ADD
CA-G001A
C D P
G1
G2
G3
G4
G5
G6
G7
G8
G9
G10
G11
G12
G13
G14
G15
G16
G17
GND
GND
GND
+5V
+8.7V
+8.7V
NC
R-Y OUT
Y-B OUT
R-Y IN
Y-B IN
NC
SC (BO)
NC(YCL)
TP-RA
TP-BA
NC

16-2 BOARD DIAGRAM OF CDP BOARD Ⓖ

- CA-G001A


UP
C27
C26
C20
C29
C16
C15
C13
C11
C08
IC02
R31
R22
R02
R14
CA-G001A
C02

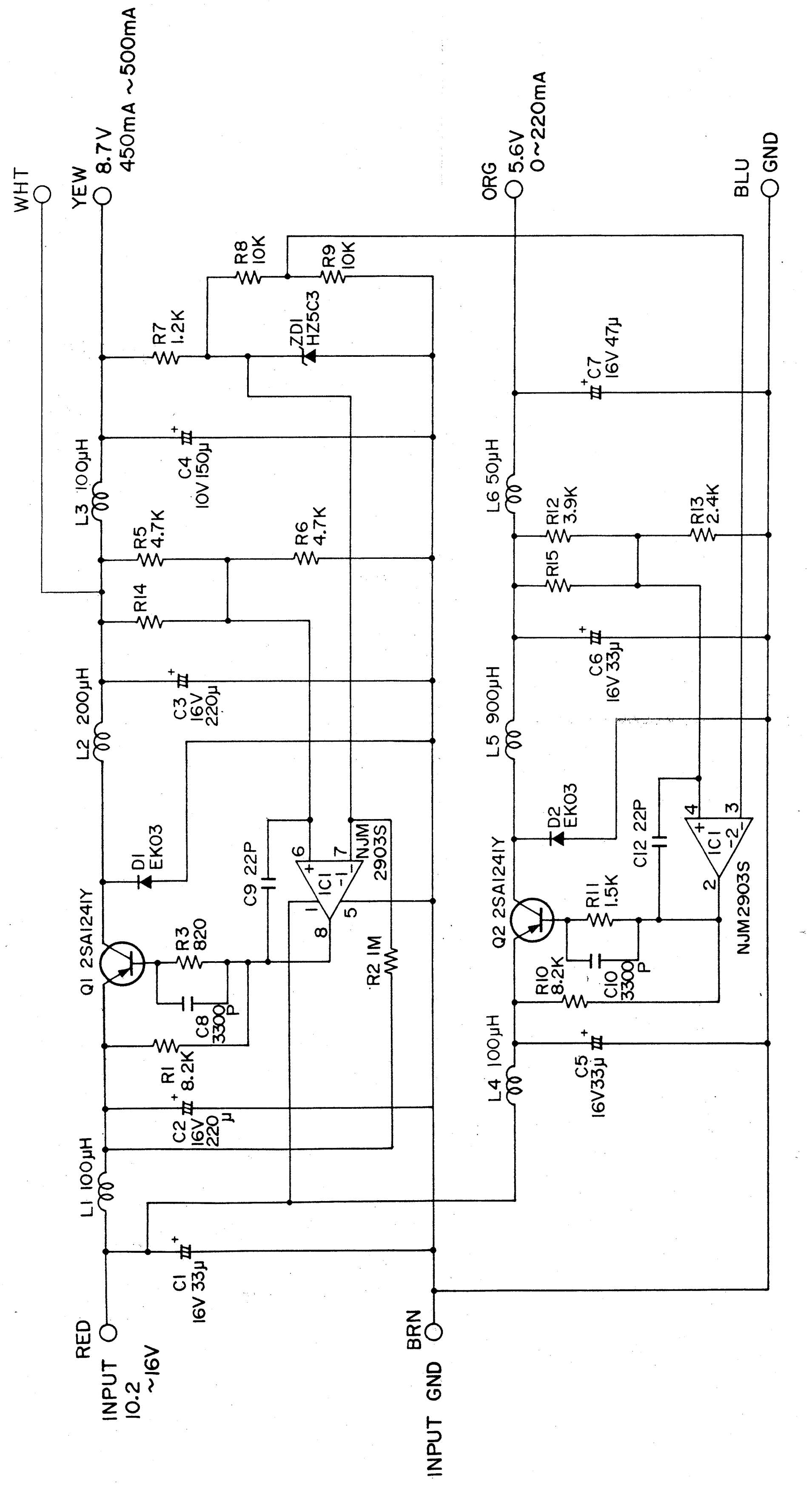
TOP VIEW


UP
TP-BA
CK3020
R29
R27
Q04
R24
R25
D01
Q03
R20
R21
C23
Q02
Q01
R01
R10
R03
R07
C04

BOTTOM VIEW

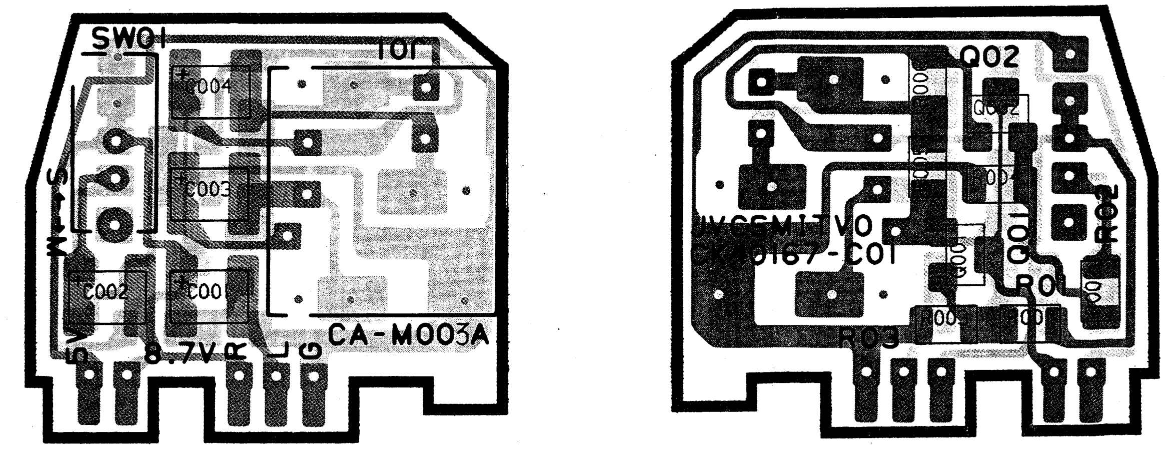
21 CIRCUIT DIAGRAM OF SW. REGLATOR

- CE40687


WHT
YEW 8.7V 450mA ~500mA
ORG 5.6V 0~220mA
BLU GND
R8 10K
R9 10K
R7 1.2K
ZD1 HZ5C3
C7 16V 47μ
C4 10V 150μ
L3 100μH
L6 50μH
R12 3.9K
R13 2.4K
R5 4.7K
R6 4.7K
R15
R14
C6 16V 33μ
C3 16V 220μ
L2 200μH
L5 900μH
D1 EK03
D2 EK03
C9 22P
C12 22P
IC1 -1
NJM 2903S
IC1 -2
NJM2903S
6
7
5
8
4
3
2
Q1 2SA1241Y
Q2 2SA1241Y
R3 820
R11 1.5K
R2 1M
R10 8.2K
C10 3300P
C8 3300P
R1 8.2K
C5 16V33μ
L4 100μH
C2 16V 220μ
L1 100μH
C1 16V 33μ
RED
INPUT 10.2 ~16V
BRN
INPUT GND

22 BOARD DIAGRAM OF MIC BOARD

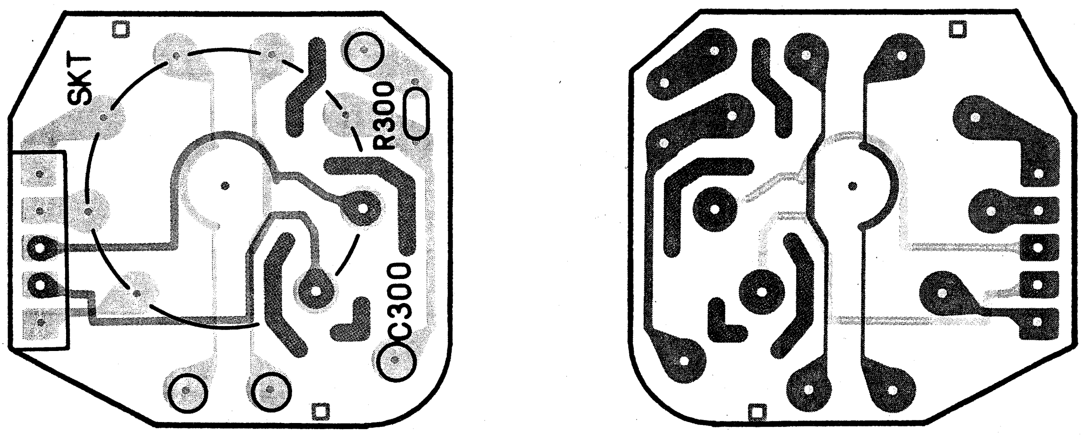
- CA-M003A


SW01
T01
C004
C003
C002
C001
8.7V
R
G
CA-M003A
Q02
Q01
R01
R02
R03

TOP VIEW

BOTTOM VIEW

23 BOARD DIAGRAM OF TUBE SOKET BOARD

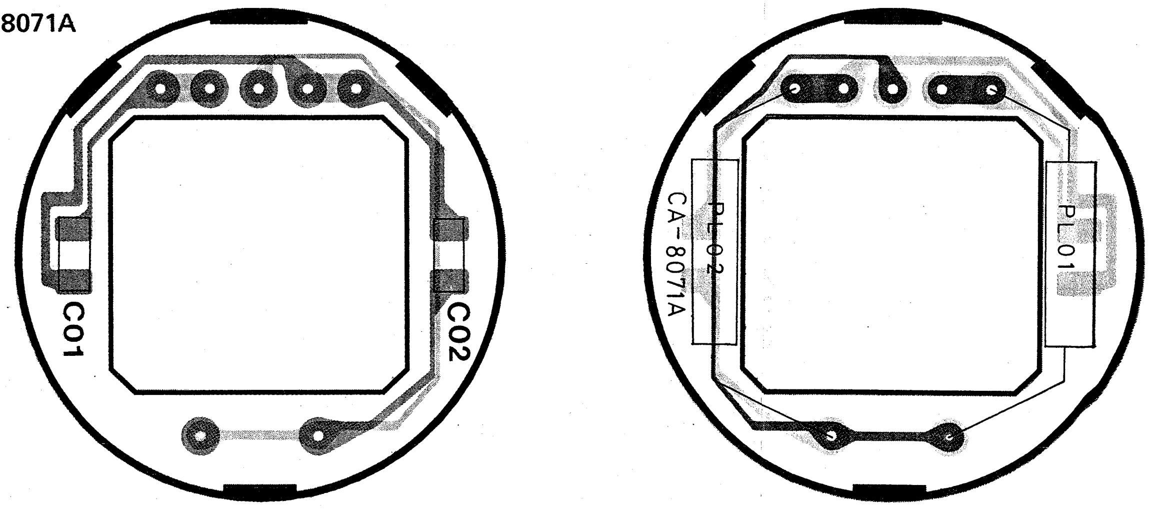

SKT
R300
C300

TUBE SIDE

BOTTOM VIEW

24 BOARD DIAGRAM OF BIAS LIGHT BOARD

- CA-8071A


C01
C02
PL01
PL02
CA-8071A

TOP VIEW

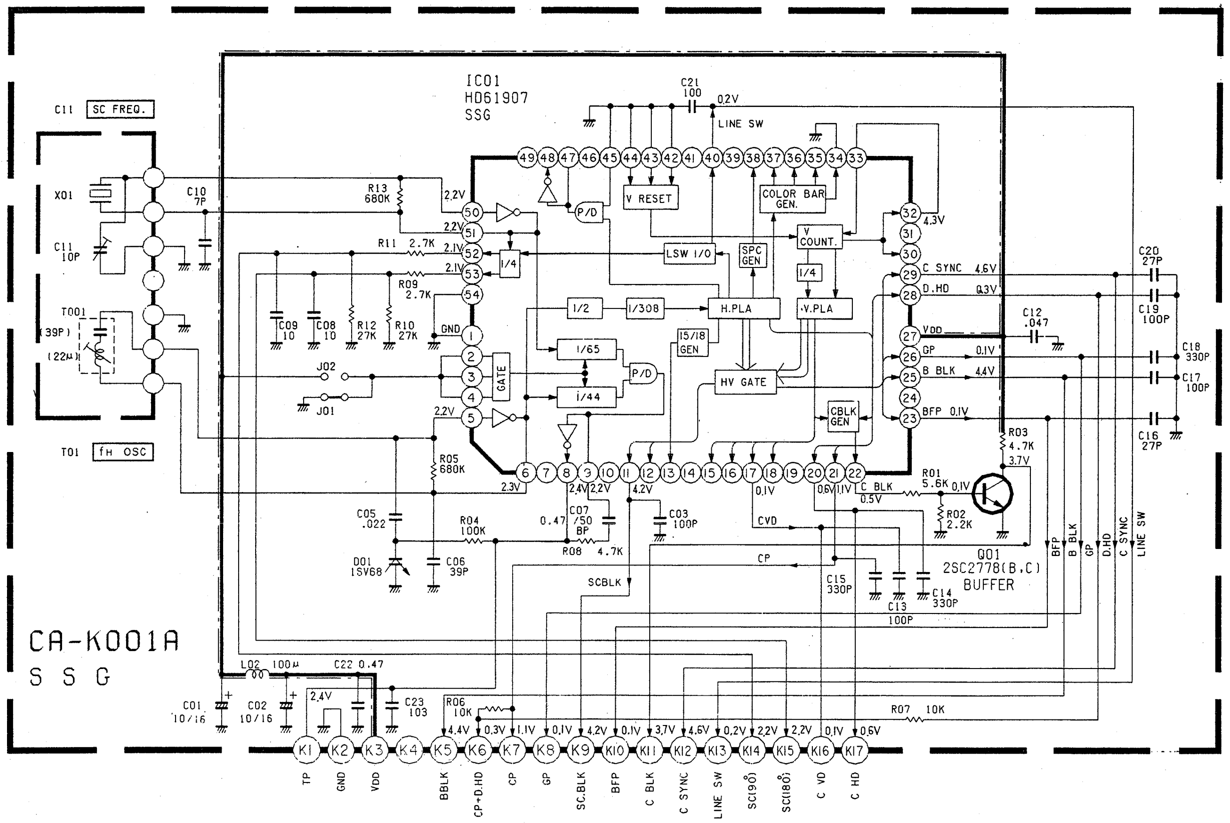
BOTTOM VIEW

▨ Top side pattern of PC BOARD.

■ Bottom side pattern of PC BOARD.

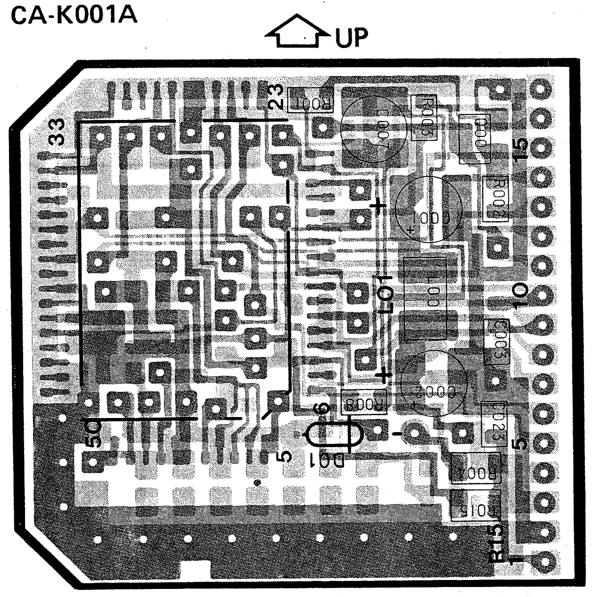
19-1 CIRCUIT DIAGRAM OF SSG BOARD Ⓚ

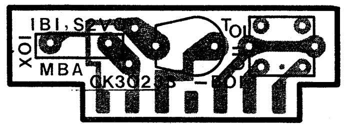
- CA-K001A

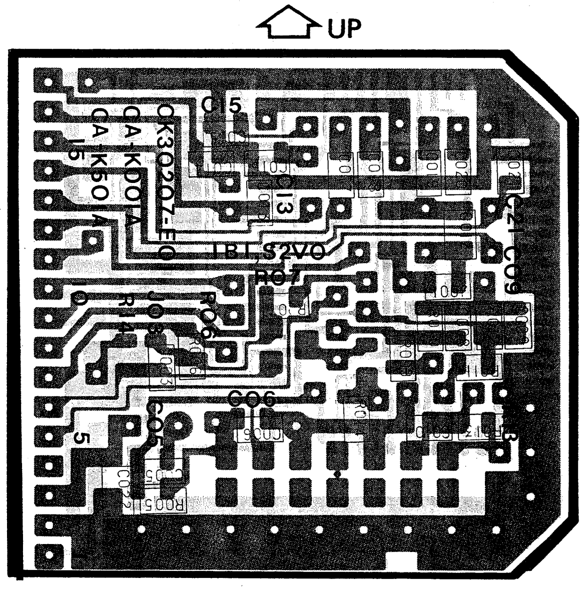

IC01
HD61907
SSG
CA-K001A
S S G
SC FREQ.
X01
T001
fH OSC
V RESET
COLOR BAR GEN.
V COUNT.
LSW I/O
SPC GEN
1/4
1/2
1/308
H.PLA
V.PLA
1/65
15/18 GEN
P/D
1/44
HV GATE
GATE
CBLK GEN
C SYNC
D.HD
VDD
GP
B BLK
BFP
LINE SW
Q01
2SC2778(B,C)
BUFFER
D01
1SV68
K1 K2 K3 K4 K5 K6 K7 K8 K9 K10 K11 K12 K13 K14 K15 K16 K17
TP
GND
VDD
BBLK
CP+D.HD
CP
GP
SC.BLK
BFP
C BLK
C SYNC
LINE SW
SC(0)
SC(180)
C VD
C HD

19-2 BOARD DIAGRAM OF SSG BOARD Ⓚ

- CA-K001A




X01
IBI.S2V
MBA
T01

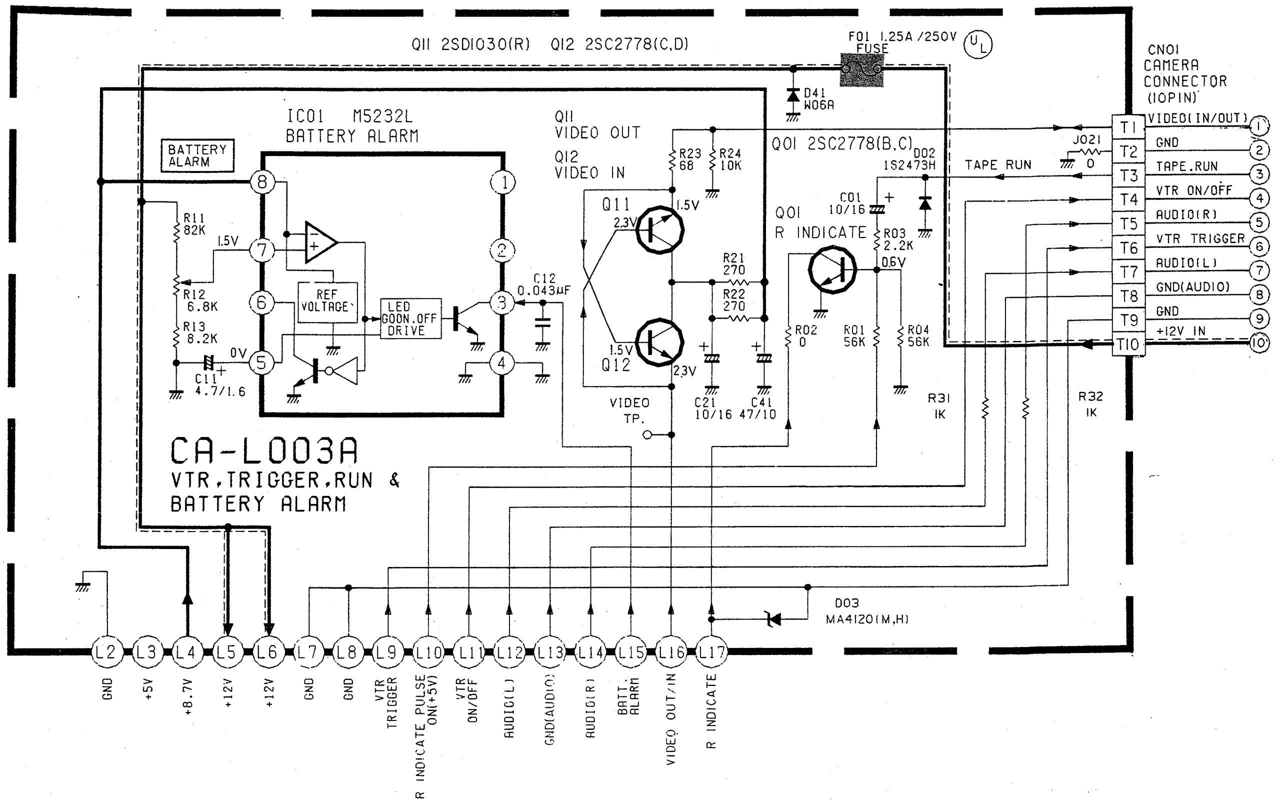


TOP VIEW

BOTTOM VIEW

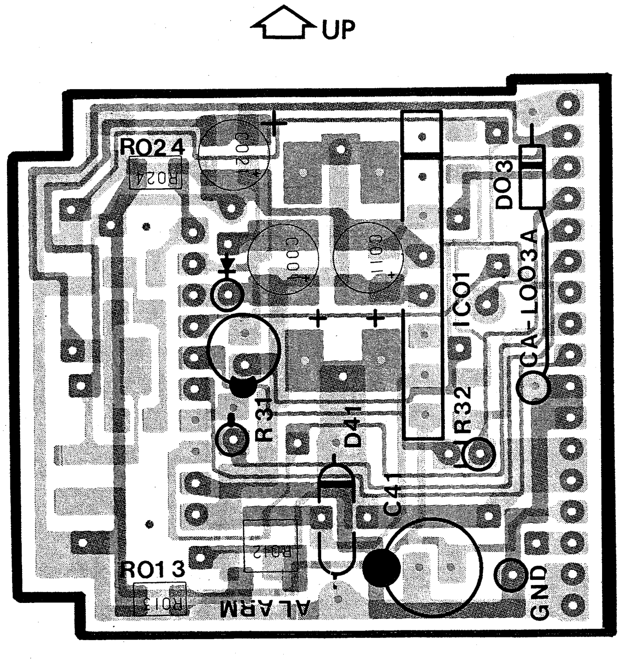
20-1 CIRCUIT OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ

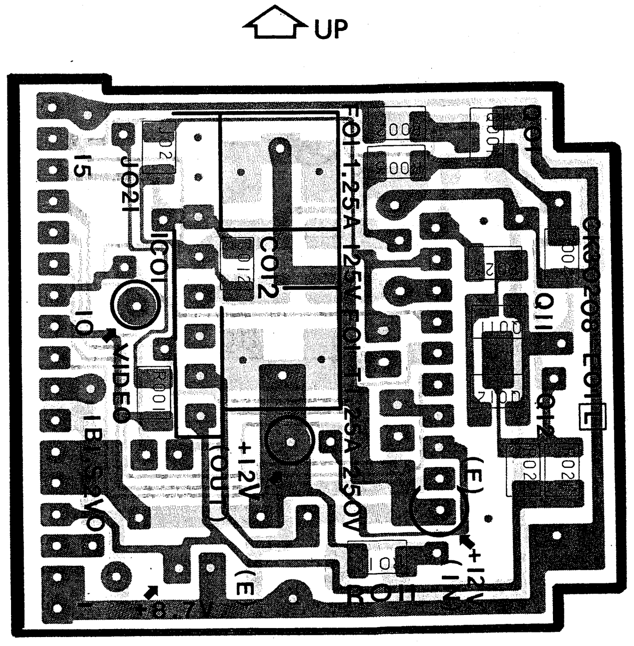
- CA-L003A


Q11 2SD1030(R) Q12 2SC2778(C,D)
F01 1.25A /250V FUSE
CN01 CAMERA CONNECTOR (10PIN)
IC01 M5232L BATTERY ALARM
BATTERY ALARM
REF VOLTAGE
LED GOON.OFF DRIVE
Q11 VIDEO OUT
Q12 VIDEO IN
Q01 2SC2778(B,C)
Q01 R INDICATE
D41 W06A
D02 1S2473H
D03 MA4120(M,H)
VIDEO TP.
TAPE RUN
CA-L003A
VTR.TRIGGER.RUN &
BATTERY ALARM
T1 VIDEO(IN/OUT)
T2 GND
T3 TAPE.RUN
T4 VTR ON/OFF
T5 AUDIO(R)
T6 VTR TRIGGER
T7 AUDIO(L)
T8 GND(AUDIO)
T9 GND
T10 +12V IN
L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12 L13 L14 L15 L16 L17
GND
+5V
+8.7V
+12V
+12V
GND
GND
VTR TRIGGER
R INDICATE PULSE ON(+5V)
VTR ON/OFF
AUDIO(L)
GND(AUDIO)
AUDIO(R)
BATT. ALARM
VIDEO OUT/IN
R INDICATE

20-2 BOARD DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ

- CA-L003A


UP
ALARM
GND

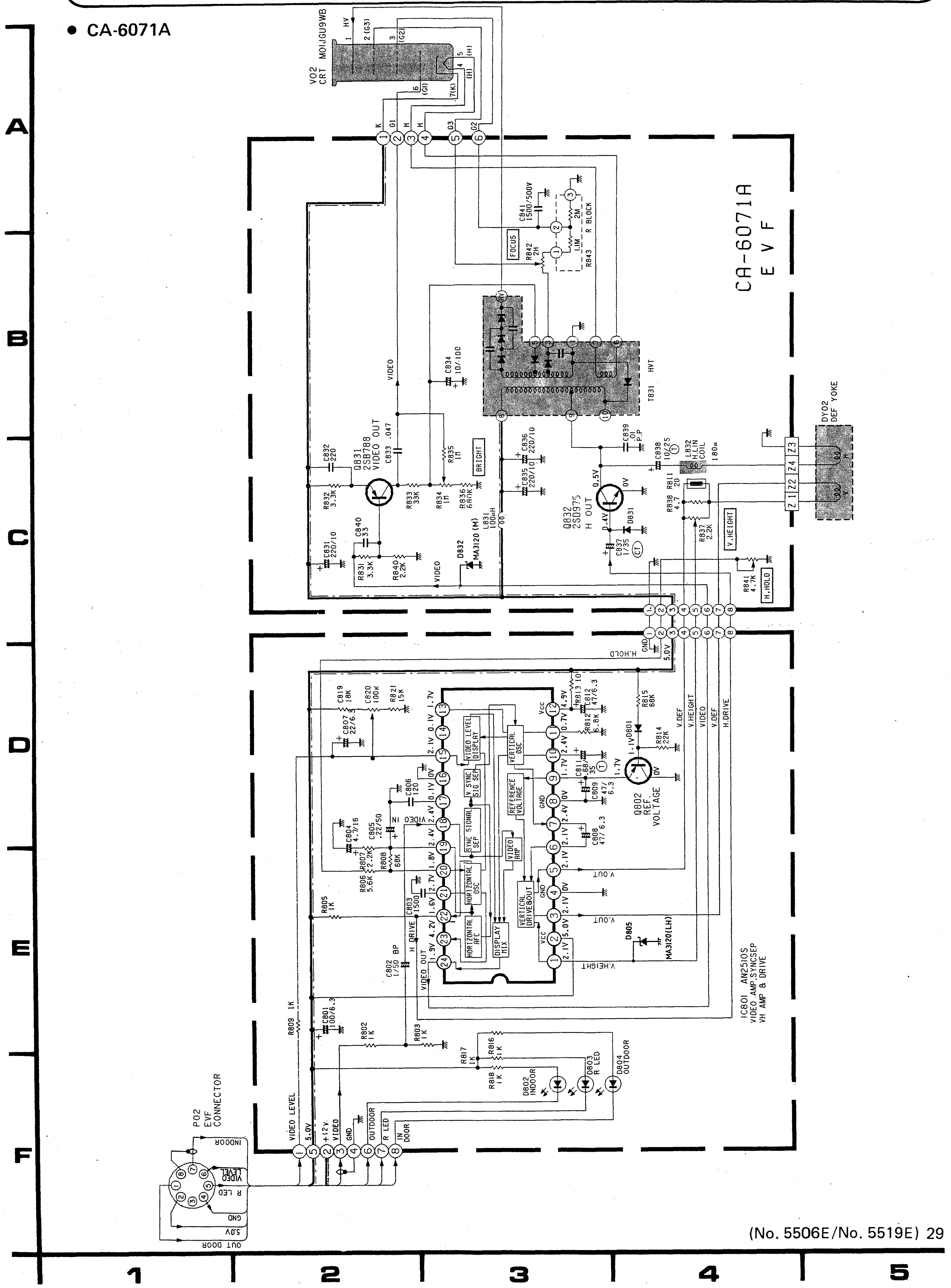

UP
F01 1.25A 125V

TOP VIEW

BOTTOM VIEW

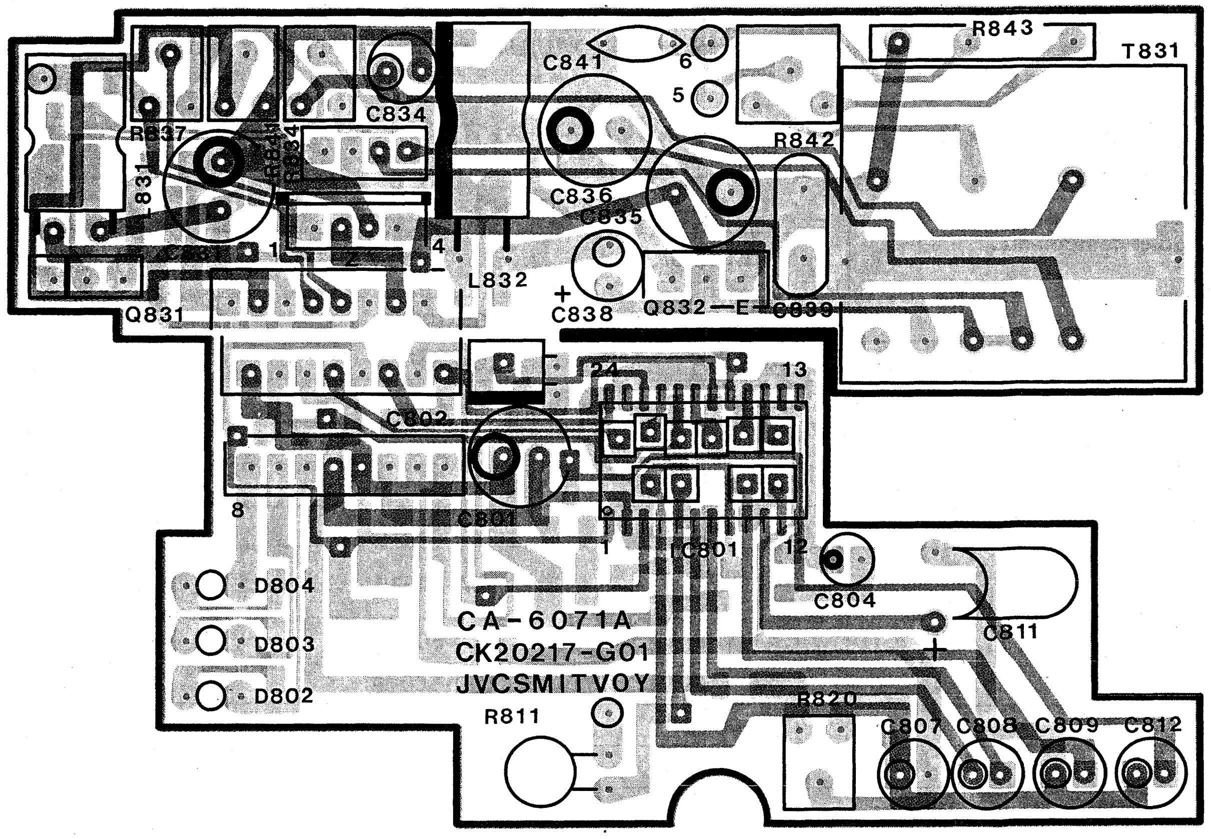
25-1 CIRCUIT DIAGRAM OF EVF

- CA-6071A

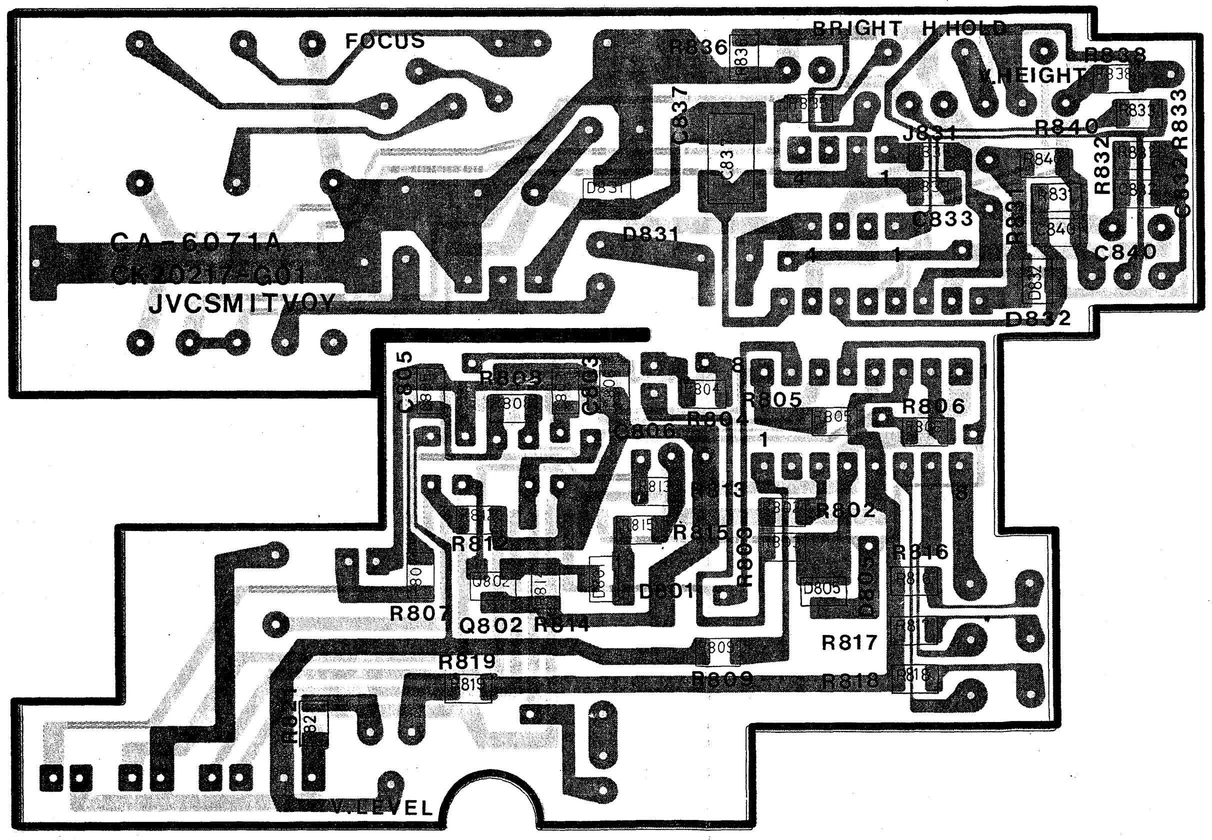

V02 CRT M01JGU9WB
CA-6071A EVF
T831 HVT
DY02 DEF YOKE
C841 1500/500V
R842 2M
R843 2M
R BLOCK
FOCUS
BRIGHT
C834 10/100
Q831 2SD1788 VIDEO OUT
Q832 2SD975 H OUT
L831 100μH
L832 H.LIN COIL
V.HEIGHT
H.HOLD
D831
D832 MA3120(M)
IC801 AN2510S VIDEO AMP, SYNCSEP VH AMP & DRIVE
VIDEO LEVEL DISPLAY
V SYNC SIG SEP
SYNC SIGNAL SEP
HORIZONTAL OSC
HORIZONTAL AFC
DISPLAY MIX
VERTICAL OSC
REFERENCE VOLTAGE
VIDEO AMP
VERTICAL DRIVE&OUT
Q802 REF. VOLTAGE
D805 MA3120(LH)
D802 INDOOR
D803 R LED
D804 OUTDOOR
P02 EVF CONNECTOR
VIDEO LEVEL
5.0V
+12V
VIDEO
GND
OUTDOOR
R LED
IN DOOR
V.DEF
V.HEIGHT
H.DRIVE
V.OUT
A
B
C
D
E
F
1
2
3
4
5

25-2 BOARD DIAGRAM OF EVF

- CA-6071A


R843
T831
C841
C834
R837
R842
L831
C836
C835
L832
C838
Q831
Q832
C802
C801
IC801
D804
D803
D802
C804
C811
CA-6071A
CK20217-G01
JVCSMITV0Y
R811
R820
C807
C808
C809
C812

TOP VIEW


FOCUS
BRIGHT
H.HOLD
V.HEIGHT
R836
R838
C837
C831
J831
R840
R832
R833
C833
D831
C840
D832
CA-6071A
CK20217-G01
JVCSMITV0Y
C805
R805
R806
R804
R802
R815
R816
R807
Q802
R814
D801
R817
R819
R809
R818
V.LEVEL

BOTTOM VIEW

▨ Top side pattern of PC BOARD.
■ Bottom side pattern of PC BOARD.

26 CIRCUIT DIAGRAM OF GX-N4U/UT

Components of **GX-N4U/UT** differ very little from those of **GX-N7U/UT**.
By referring to the following Table, use the components of **GX-N7U/UT** when they are mutually identical between the two models.

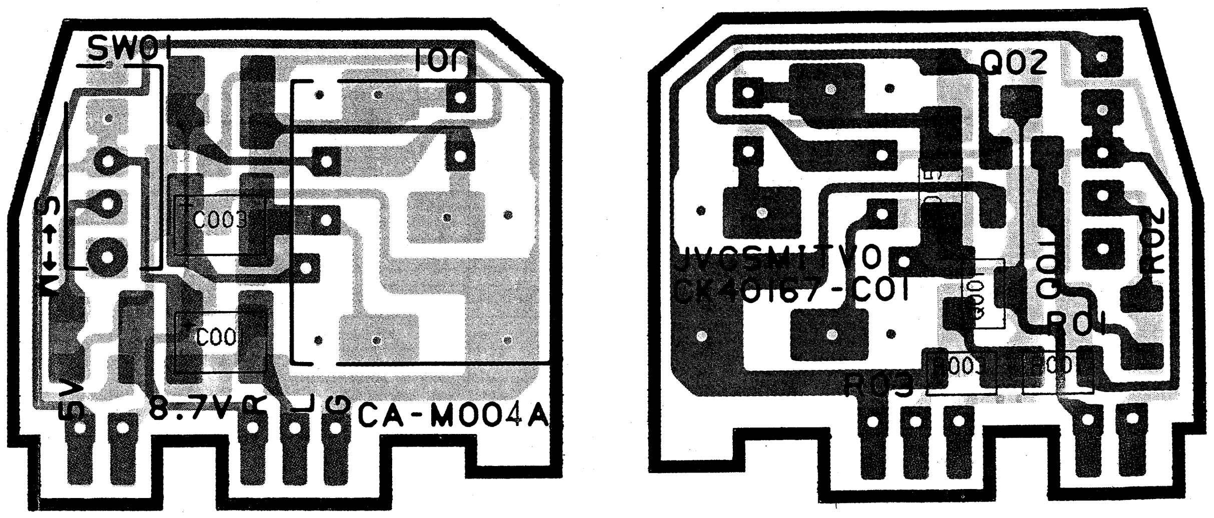
- **Boards employed on GX-N7U/UT and GX-N4U/UT**

Names of board modules and other components	BOARD NO.		REMARKS
	GX-N7U/UT	GX-N4U/UT	
MOTHER BOARD	**CA-1071C**	**CA-1073B**	See P. 35 ~ P. 38
PRE-AMP.	CA-2071A	CA-2071A	
AUDIO BOARD	**CA-A005A**	**CA-A004A**	See P. 39
PRE-PROCESS BOARD	CA-B001A	CA-B001A	
CARRIER MATRIX BOARD	CA-C001A	CA-C001A	
DETECTOR BOARD	CA-D001A	CA-D001A	
BLACK SET/ AUTO WHITE BOARD	**CA-E005A**	**CA-E003A**	See P. 40
COLOR γ BOARD	CA-F001A	CA-F001A	
CDP BOARD	CA-G001A	CA-G001A	
AGC BOARD	CA-H001A	CA-H001A	
ENCODER BOARD	CA-J003A	CA-J003A	
SSG BOARD	CA-K001A	CA-K001A	
VTR TRIGGER, RUN & BATTERY ALARM BOARD	CA-L003A	CA-L003A	
MIC BOARD	**CA-M003A**	**CA-M004A**	See P. 32
SW. REGULATOR	CE40687	CE40687	
EVF	CA-6071A	CA-6071A	
LENS	**CLC02206-B-BFZ**	**CLC03206-A-B**	

As to board modules that differ from those of **GX-N7U/UT**, refer to those pages indicated in the "REMARKS" column.

27 BOARD DIAGRAM OF MIC BOARD

- CA-M004A

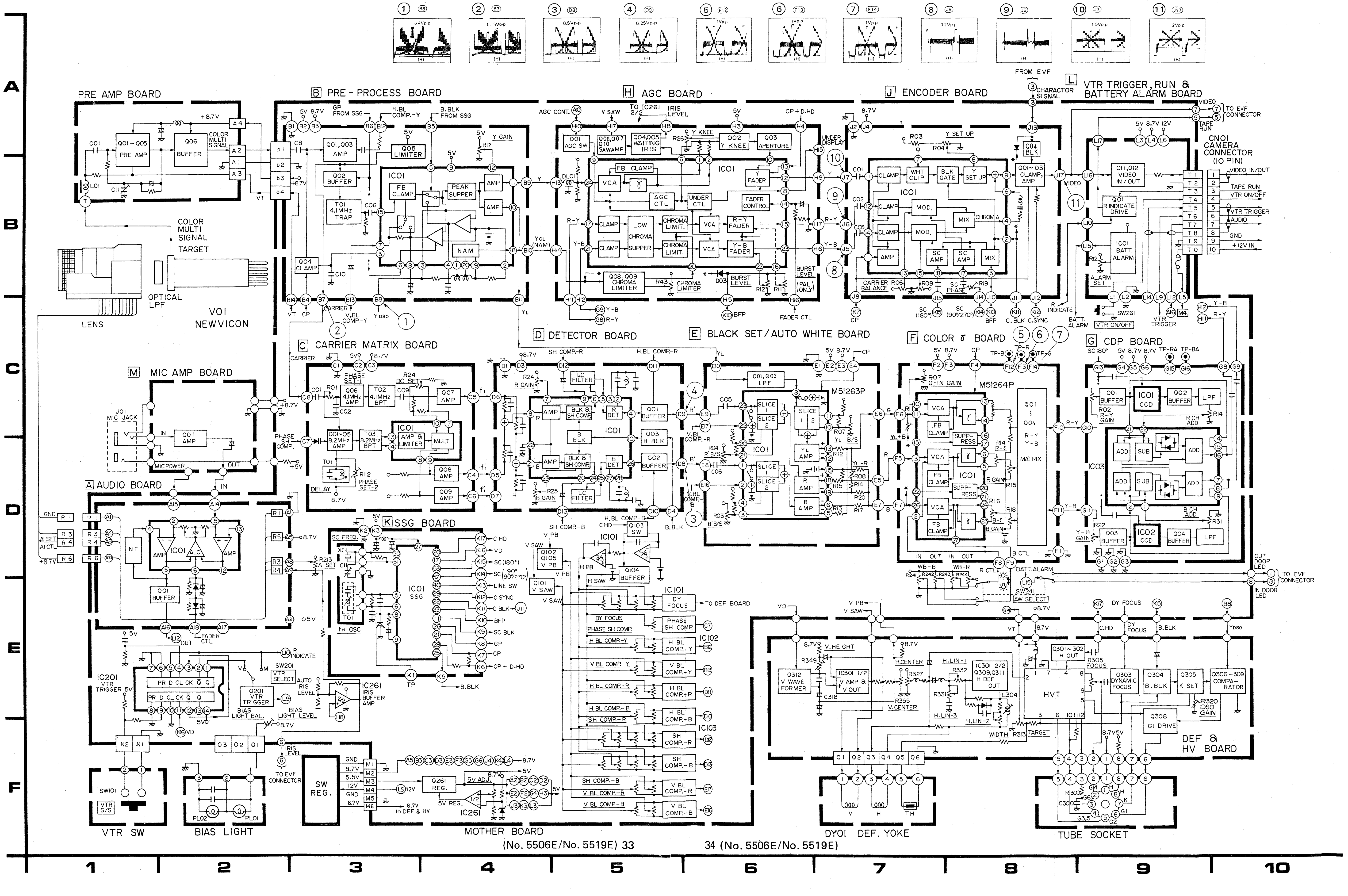


TOP VIEW BOTTOM VIEW

▨ Top side pattern of PC BOARD.
■ Bottom side pattern of PC BOARD.

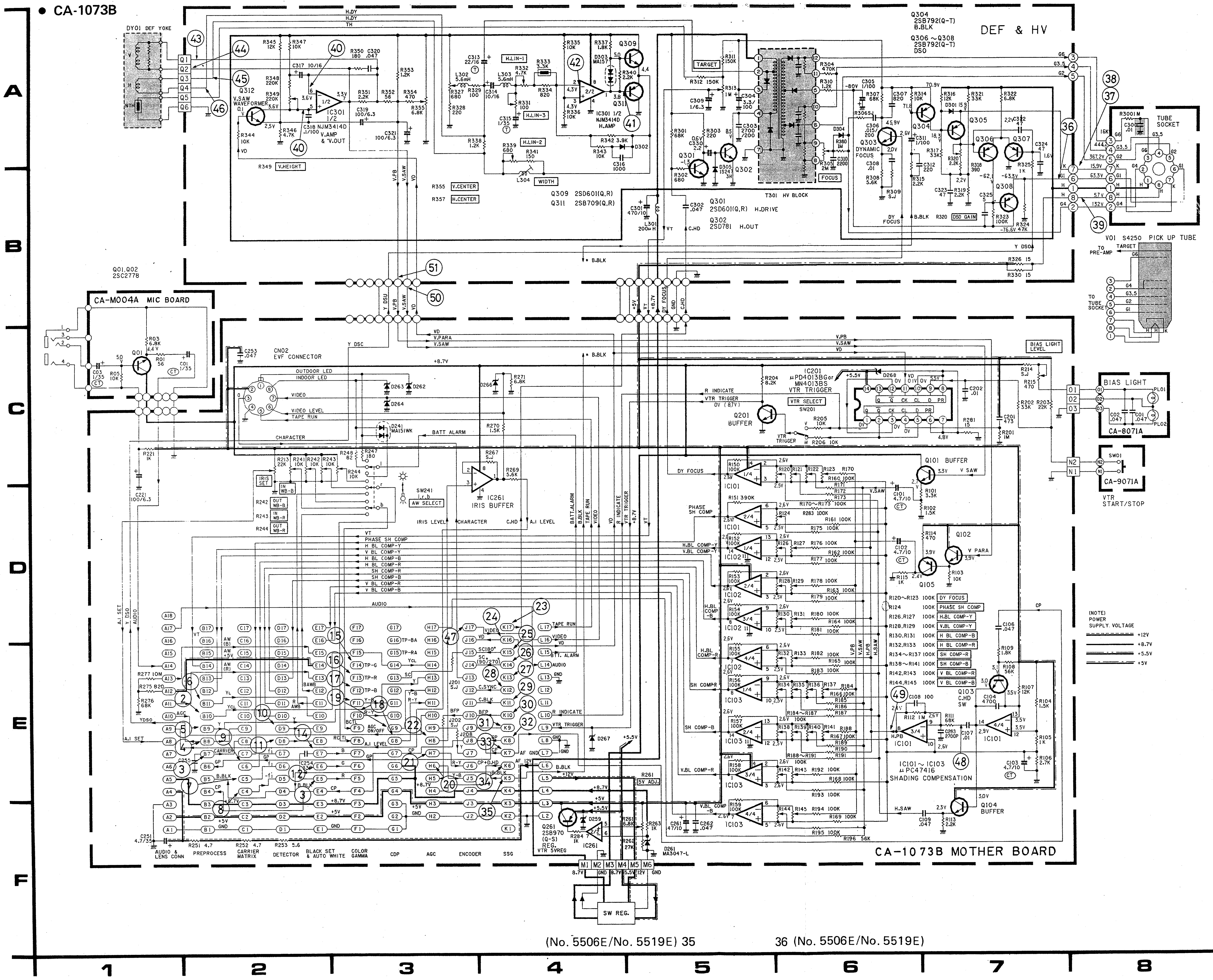
***As to the circuit diagran, refer to the "Circuit diagram of mother board (CA-1073B)."**

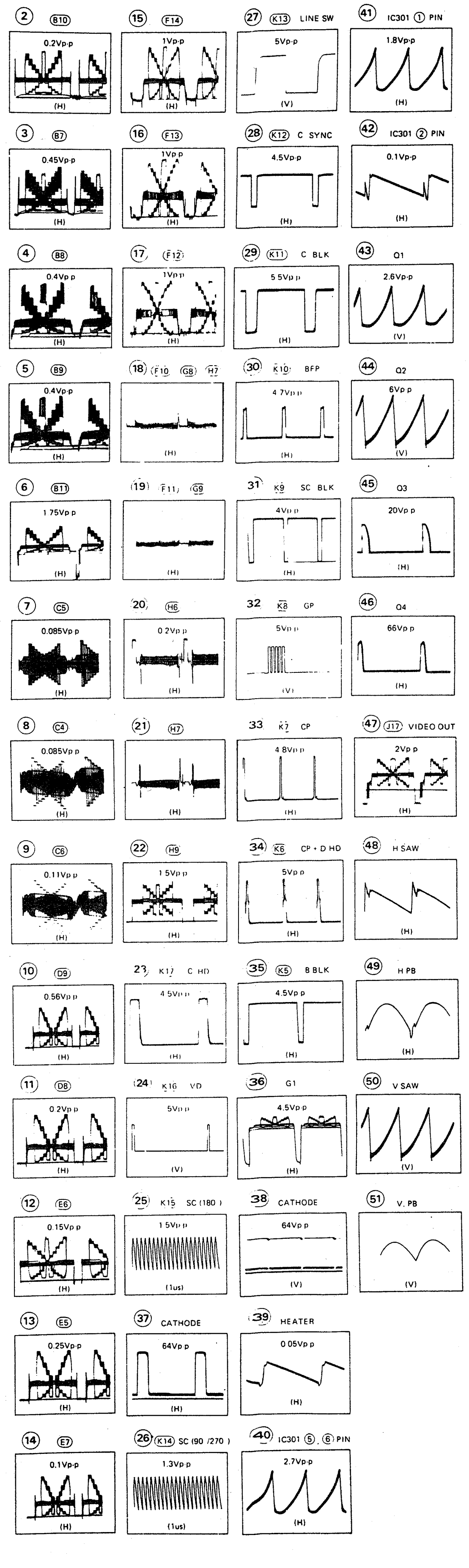
28 BLOCK DIAGRAM OF MAIN CIRCUIT(GX-N4U/UT)


① B8 ② B7 ③ D8 ④ D9 ⑤ F12 ⑥ F13 ⑦ F14 ⑧ J5 ⑨ J6 ⑩ I7 ⑪ J17
PRE AMP BOARD
B PRE-PROCESS BOARD
H AGC BOARD
J ENCODER BOARD
L VTR TRIGGER, RUN & BATTERY ALARM BOARD
COLOR MULTI SIGNAL TARGET
OPTICAL LPF
LENS
V01 NEWVICON
M MIC AMP BOARD
C CARRIER MATRIX BOARD
D DETECTOR BOARD
E BLACK SET/AUTO WHITE BOARD
F COLOR γ BOARD
G CDP BOARD
A AUDIO BOARD
K SSG BOARD
CN01 CAMERA CONNECTOR (10 PIN)
VIDEO IN/OUT
TAPE RUN
VTR ON/OFF
VTR TRIGGER
AUDIO
GND
+12V IN
TO EVF CONNECTOR
IC201 VTR TRIGGER
IC261 IRIS BUFFER AMP
SW REG.
MOTHER BOARD
DEF & HV BOARD
HVT
DY01 DEF. YOKE
TUBE SOCKET
VTR SW
BIAS LIGHT
A B C D E F
1 2 3 4 5 6 7 8 9 10

29-1 CIRCUIT DIAGRAM OF MOTHER BOARD(GX-N4U/UT)

- CA-1073B


DEF & HV
DY01 DEF YOKE
Q304 2SB792(Q-T) B.BLK
Q306~Q308 2SB792(Q-T) DSO
IC301 NJM3414D V.AMP & V.OUT
IC301 1/2 NJM3414D H.AMP
Q309 2SD601(Q,R)
Q311 2SB709(Q,R)
Q301 2SD601(Q,R) H.DRIVE
Q302 2SD781 H.OUT
T301 HV BLOCK
Q303 DYNAMIC FOCUS
TARGET
FOCUS
DY FOCUS
DSO GAIN
V.HEIGHT
V.CENTER
H.CENTER
H.LIN-1
H.LIN-2
H.LIN-3
WIDTH
TUBE SOCKET
V01 S4250 PICK UP TUBE
TO PRE-AMP
TO TUBE SOCKET
Q01,Q02 2SC2778
CA-M004A MIC BOARD
CN02 EVF CONNECTOR
IC201 μPD4013BG or MN4013BS VTR TRIGGER
Q201 BUFFER
VTR SELECT SW201
BIAS LIGHT LEVEL
BIAS LIGHT
CA-8071A
CA-9071A
VTR START/STOP
IC261 IRIS BUFFER
SW241 AW SELECT
BATT ALARM
Q101 BUFFER
Q102 V PARA
Q103 C.HD SW
Q104 BUFFER
IC101~IC103 μPC47416 SHADING COMPENSATION
Q261 2SB970 (Q-S) REG.
IC261 VTR 5VREG
SW REG.
(NOTE) POWER SUPPLY VOLTAGE
+12V
+8.7V
+5.5V
+5V
AUDIO & LENS CONN
PREPROCESS
CARRIER MATRIX
DETECTOR
BLACK SET & AUTO WHITE
COLOR GAMMA
CDP
AGC
ENCODER
SSG
CA-1073B MOTHER BOARD
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10



29-2 BOARD DIAGRAM OF MOTHER BOARD

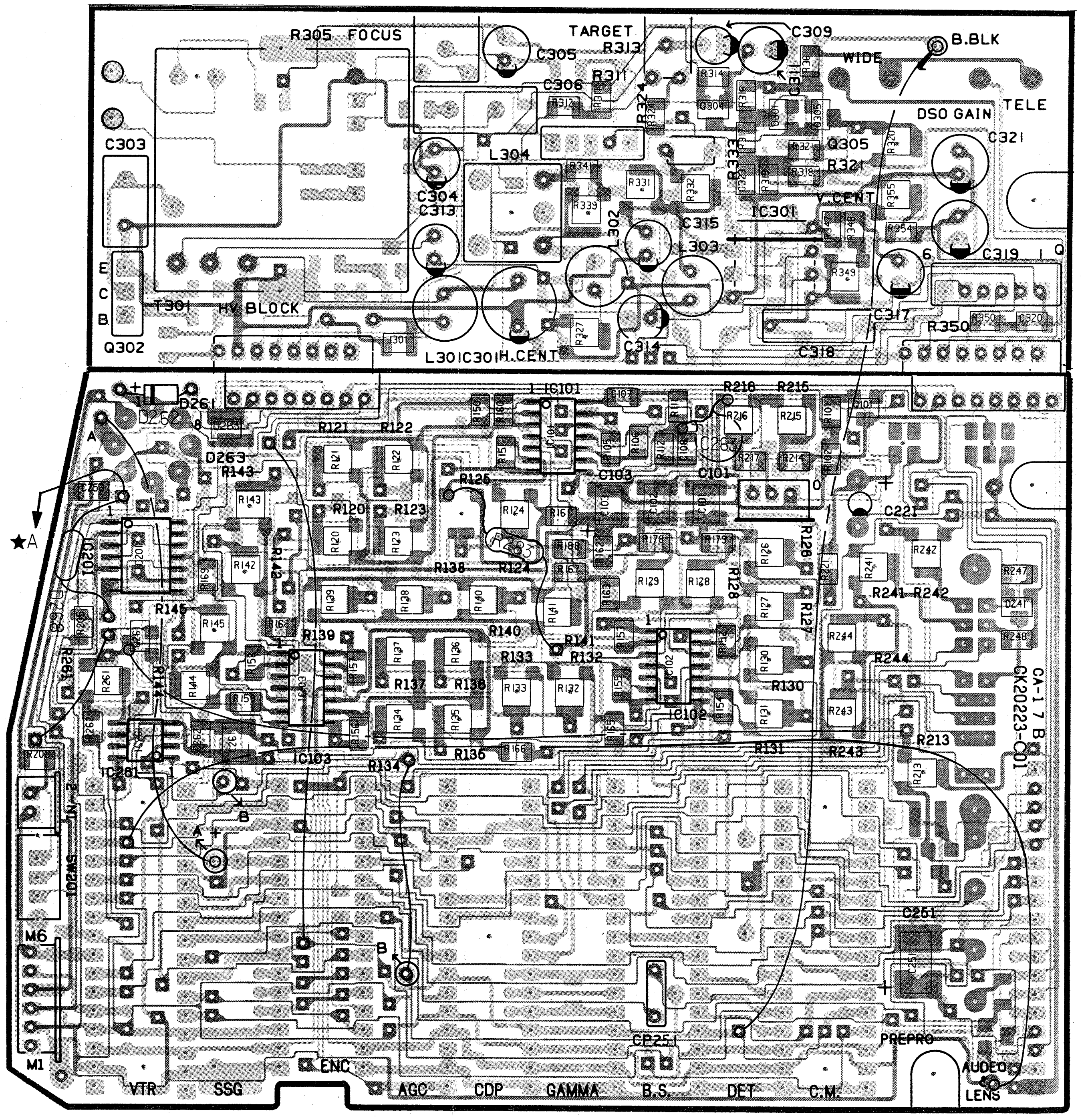
- CA-1073B

*Note: ▨ Red color shows top side pattern of PC BOARD.

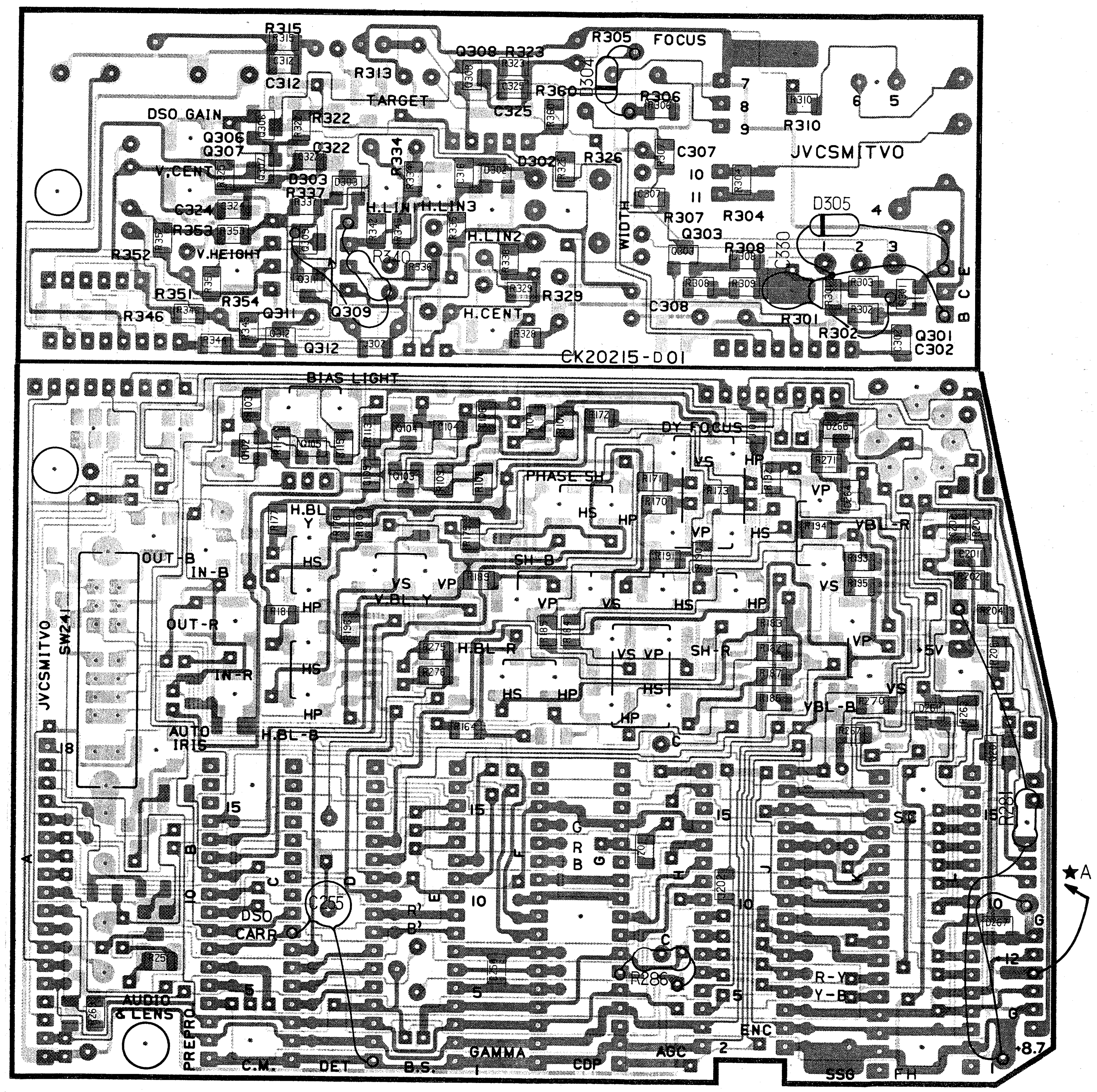
▨ Gray color shows bottom side pattern of PC BOARD.

FRONT

FRONT


R305 FOCUS
TARGET
R313
R311
C305
C306
C309
B.BLK
WIDE
TELE
DSO GAIN
C321
C303
C304
C313
L304
L302
C315
L303
IC301
Q305
R321
V.CENT
C319
T301
HV BLOCK
Q302
L301
IC301
H.CENT
C314
C317
R350
C318
IC101
R216
R215
C101
C103
C221
D261
D263
R143
R121
R122
R120
R123
R125
R126
R128
R127
R241
R242
R244
R213
R243
R131
R130
R132
R133
R137
R136
R139
R140
R145
R142
IC103
IC102
IC261
R134
R136
R138
R124
★A
SW201
M6
M1
VTR
SSG
ENC
AGC
CDP
GAMMA
B.S.
DET
C.M.
PREPRO
AUDEO
LENS
C251
CP251
CA-1 7 B
CK20223-C01

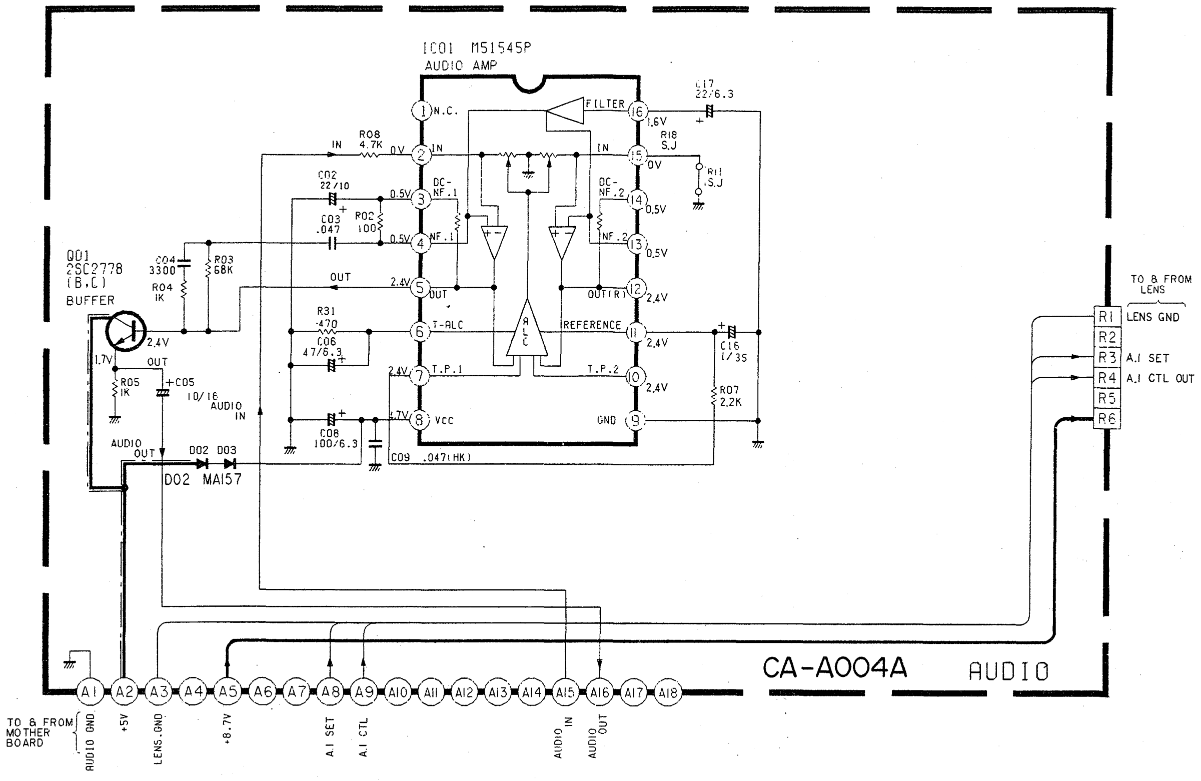
TOP VIEW


R315
Q308
R323
R305
FOCUS
R313
TARGET
C312
C325
R360
R306
R310
DSO GAIN
R322
Q306
Q307
Q322
V.CENT
R334
D302
R326
C307
JVCSMITVO
D303
R337
H.LIN1
H.LIN3
H.LIN2
WIDTH
R307
R304
Q303
D305
C324
R353
R352
V.HEIGHT
R340
R308
C330
R351
R354
Q311
Q309
H.CENT
R329
C308
R301
R302
Q301
C302
R346
Q312
CK20215-D01
BIAS LIGHT
DY FOCUS
PHASE SH
H.BL Y
OUT-B
IN-B
OUT-R
IN-R
SW241
JVCSMITVO
AUTO IRIS
H.BL-B
H.BL-R
Y.BL-Y
YBL-R
YBL-B
VS
HP
HS
VP
SH-B
SH-R
5V
DSO CARR
C255
R286
R-Y
Y-B
AUDIO & LENS
PREPRO
C.M.
DET
B.S.
GAMMA
CDP
AGC
ENC
SSG
FH
8.7
★A

BOTTOM VIEW

30-1 CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ

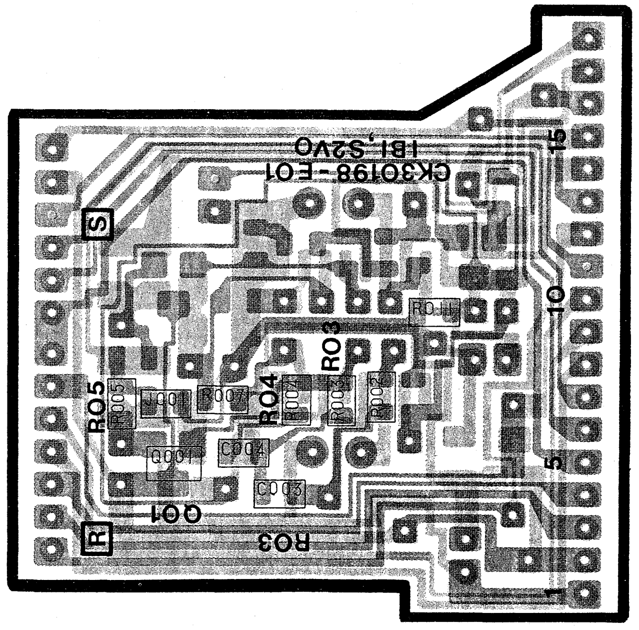
- CA-A004A


IC01 M51545P
AUDIO AMP
N.C.
IN
DC-NF.1
NF.1
OUT
T-ALC
T.P.1
VCC
FILTER
DC-NF.2
NF.2
OUT(R)
REFERENCE
T.P.2
GND
Q01 2SC2778 (B,C)
BUFFER
R08 4.7K
C02 22/10
C03 .047
R02 100
C04 3300
R03 68K
R04 1K
R31 470
C06 47/6.3
C08 100/6.3
C09 .047(HK)
C05 10/16
R05 1K
C17 22/6.3
R18 S.J
R11 S.J
C16 1/35
R07 2.2K
D02 D03
D02 MA157
AUDIO IN
AUDIO OUT
TO & FROM LENS
R1 LENS GND
R2
R3 A.I SET
R4 A.I CTL OUT
R5
R6
CA-A004A AUDIO
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18
TO & FROM MOTHER BOARD
AUDIO GND
+5V
LENS GND
+8.7V
A.I SET
A.I CTL
AUDIO IN
AUDIO OUT

30-2 BOARD DIAGRAM OF AUDIO BOARD Ⓐ

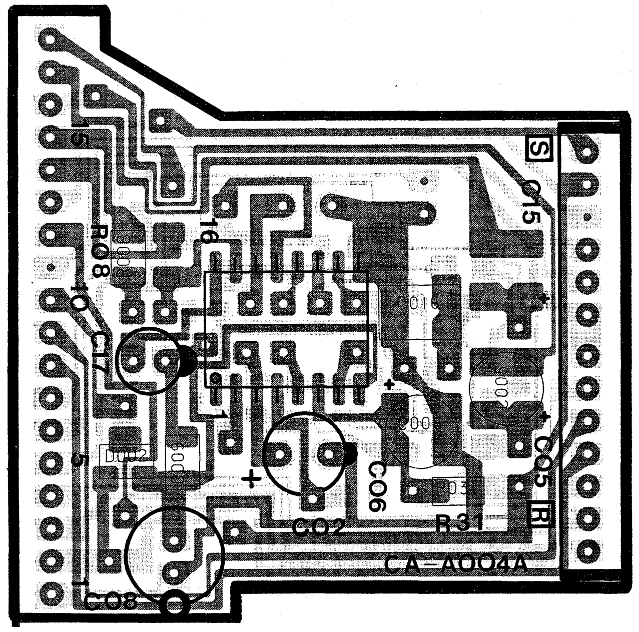
- CA-A004A

UP


CK30198-E01
IBI S2V0
S
R
15
10
5
1
R05
R04
R03
Q01
C001
C002
C003
C004
C005

TOP VIEW

UP


S
R
16
R08
C17
C06
C05
C02
C08
R31
15
10
5
1
CA-A004A

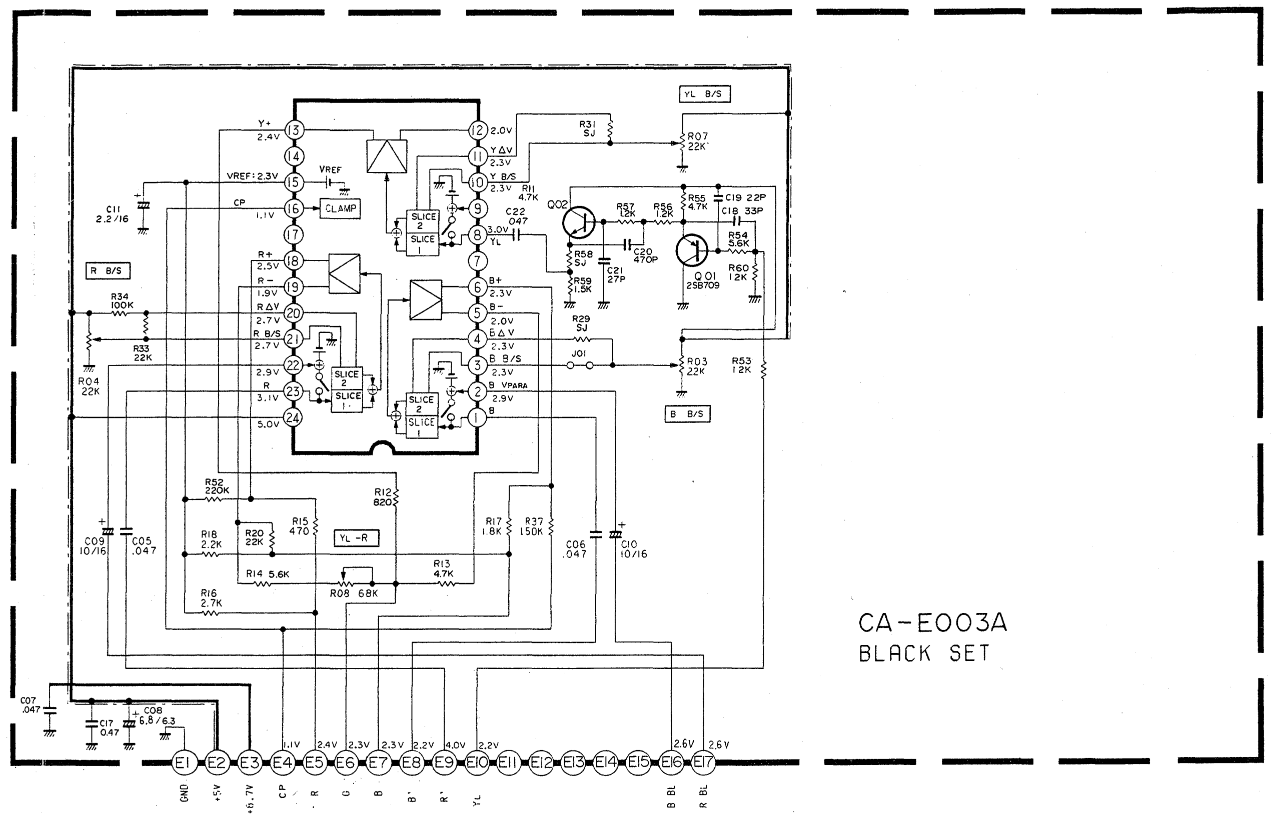
BOTTOM VIEW

▨ Top side pattern of PC BOARD.

■ Bottom side pattern of PC BOARD.

31-1 CIRCUIT DIAGRAM OF BLACK SET BOARD Ⓔ

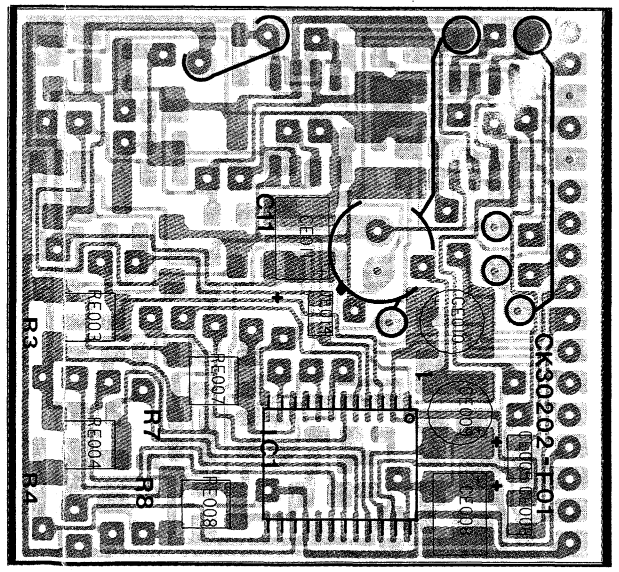
- CA-E003A


YL B/S
R B/S
B B/S
VREF
CLAMP
SLICE 1
SLICE 2
YL -R
Q01 2SB709
Q02
R07 22K
R31 SJ
R11 4.7K
R55 4.7K
R54 5.6K
R57 12K
R56 12K
R58 SJ
R59 1.5K
R60 12K
C19 22P
C18 33P
C22 .047
C20 470P
C21 27P
R29 SJ
J01
R03 22K
R53 12K
C11 2.2/16
R34 100K
R33 22K
R04 22K
R52 220K
R12 820
R15 470
R18 2.2K
R20 22K
R14 5.6K
R08 68K
R13 47K
R16 2.7K
R17 1.8K
R37 150K
C05 .047
C06 .047
C09 10/16
C10 10/16
C07 .047
C17 .047
C08 6.8/6.3
CA-E003A
BLACK SET
E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16 E17
GND
+5V
+8.7V
CP
R
G
B
YL

31-2 BOARD DIAGRAM OF BLACK SET BOARD Ⓔ

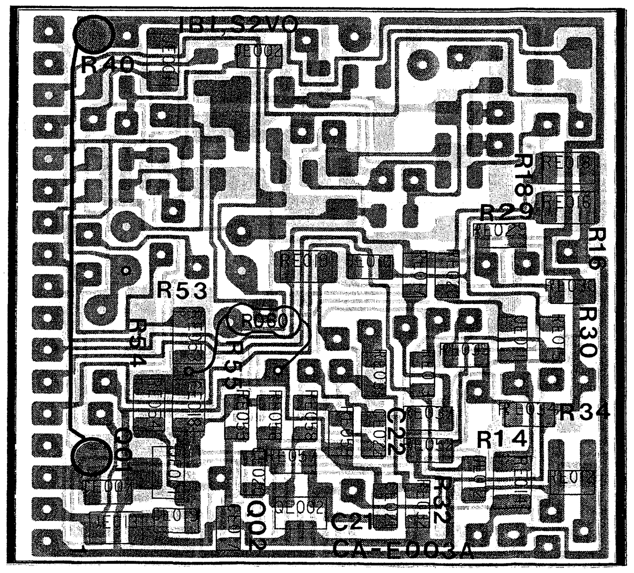
- CA-E003A

UP


C11
CK30202-E01
R3
R4
R7
R8
C1

TOP VIEW

UP


IBI S2V0
R40
R18
R20
R16
R30
R34
R14
R53
R54
R55
C21
CA-E003A

BOTTOM VIEW

GX-N7U/UT
GX-N4U/UT Modified One
PARTS LIST

Additions and Partial Changes of Parts List

1. The part of the Parts List in the issued Service Manual has been changed as follows.
2. The parts before change are not described.
3. In addition to this Parts List, refer to the issued Service Manual Parts List.

	Service Manual No.	Contents of publication	Date of publication
1	No. 5506/No. 5519	Service Manual	May. 1984
2	No. 5506B/No. 5519B	Supplymentary	Nov. 1984
3	No. 5506C/No. 5519C	Supplymentary	Fev. 1985
4	No. 5506D/No. 5519D	Supplymentary	June. 1985

CONTENTS

EXPLODED VIEW OF CAMERA BODY 7
SYSTEM ASSEMBLY REPLACEMENT PARTS LIST........ 9

PRINTED CIRCUIT BOARD PARTS LIST

1. CA-1071C/CA-1073B MOTHER BOARD 12
2. CA-A005A AUDIO BOARD 13
3. CA-A004A AUDIO BOARD 13
4. CA-B001A PREPROCESS BOARD 13
5. CA-C001A CARRIER MATRIX BOARD 13
6. CA-D001A DETECTOR BOARD 14
7. CA-E005A BLACK SET/AUTO WHITE BOARD 14
8. CA-E003A BLACK SET/AUTO WHITE BOARD 14
9. CA-F001A COLOR GAMMA BOARD 14
10. CA-G001A CDP BOARD 15
11. CA-H001A AGC BOARD 15
12. CA-J003A ENC. BOARD 15
13. CA-K001A SSG BOARD 15
14. CA-L003A VTR BOARD 16
15. CA-M003A MIC BOARD 16
16. CA-M004A MIC BOARD 16
17. CA-2071A PREAMP BOARD 16
18. CA-6071A EVF BOARD 16
19. CA-8071A BIAS LIGHT BOARD 17
PACKING 18
PACKING PARTS LIST 18

GX-N7U/UT: No. 5506E
GX-N4U/UT: No. 5519E
Oct. 1985

IMPORTANT SAFETY NOTICE:

Components identified by the ⚠ symbol in this parts information have special characteristics for safety.
These critical safety components are designed to "fail safe" under abnormal conditions. The failure of any one component often causes stress in other components which could lead to smoke or fire or other hazards. Because of this, components are selected and tested under actual fault conditions to ensure safe operation. Replacement with anything other than the identical JVC part may present a hazard.

NOTE 1 SUPPLY OF PARTS WITHOUT PARTS NO.

The parts indicated with —— in the Part No. column will not be supplied.

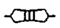
NOTE 2 DECODING OF RESISTOR, CAPACITOR AND TOLERANCE

RESISTOR All resistance values in ohms K: 1000 M: 1000000		**CAPACITOR** Capacitance values in pF or in μF		**TOLERANCE**	
C R	Carbon Resistor	BP E Cap.	Bi-Polar (or Non-Polar) Electrolytic Capacitor	F ±1%	H $^{+50}_{-10}$ %
CH MG R	Chip Metal Glaze Resistor	C Cap.	Ceramic Capacitor	G ±2%	P $^{+100}_{-0}$ %
CH V R	Chip Variable Resistor	CH C Cap.	Chip Ceramic Capacitor	J ±5%	R $^{+30}_{-10}$ %
CMF R	Coating Metal Film Resistor	CH Tan. E Cap.	Chip Tantalum Electrolytic Capacitor	K ±10%	Z $^{+80}_{-20}$ %
Comp. R	Composition Resistor	E Cap.	Electrolytic Capacitor	M ±20%	
F R	Fusible Resistor	M Cap.	Mylar Capacitor	N ±30%	
HV R	High Voltage Resistor	MM Cap.	Metalized Mylar Capacitor		
LPTC R	Linear Positive Temperature Coefficient Resistor	MP Cap.	Metalized Polystyrol Capacitor		
MF R	Metal Film Resistor	MPP Cap.	Metalized PP Capacitor		
MG R	Metal Glaze Resistor	PP Cap.	Polypropylene Capacitor		
OM R	Oxide Metal Film Resistor	PS Cap.	Polystyrol Capacitor		
P R	Plate Resistor	Tan. Cap.	Tantalum Capacitor		
UNF R	Nonflammable Resistor	CH AL BP Cap.	Chip Aluminum Bi-Polar Capacitor		
V R	Variable Resistor	CH AL BP E Cap.	Chip Aluminum Bi-Polar Electrolytic Capacitor		
		CH AL E Cap.	Chip Aluminum Electrolytic Capacitor		

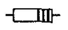
NOTE 3 HOW TO EXPRESS PARTS NUMBER OF STANDARD PARTS

Resistors and capacitors whose parts number is expressed according to the standard parts as follows are not generally described in the PC Board parts list.

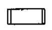
When placing order for service parts, confirm resistance values, rated power, capacitance, rated voltage and type of parts by following the schematic diagram to place order for correct parts number.

1. Carbon resitor (CR) shape of the replacement parts: Straight lead ()

Rated power	Parts number	Example of expressing resistance
1/2W	$\underbrace{QRD}_{\text{Carbon resistor}}\ \underbrace{12}_{\text{Rated power}}\ \underbrace{1}_{\text{Shape}}\ \underbrace{J}_{\text{Tolerance}} - \underbrace{○○○}_{\text{Resistance value}}\ \underbrace{S}_{\text{Symbol for compact part}}$	2R2 → 2.2Ω
1/4W	Q R D 1 4 1 J – ○ ○ ○ S	$39\underline{0} \rightarrow 39 \times 10^{\underline{0}} = 39\Omega$
1/6W	Q R D 1 6 1 J – ○ ○ ○	$15\underline{1} \rightarrow 15 \times 10^{\underline{1}} = 150\Omega$
1/8W	Q R D 1 8 1 J – ○ ○ ○ $\underbrace{A}_{\text{Symbol for compact part}}$	$68\underline{2} \rightarrow 68 \times 10^{\underline{2}} = 6.8\ k\Omega$

2. Composition resistor (Comp. R) shape of replacement parts: Straight lead ()

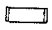
Rated power	Parts number	Example of expressing resistance
1W	$\underbrace{QRC}_{\text{Composition}}\ \underbrace{01}_{\text{Rated power}}\ \underbrace{1}_{\text{Shape}}\ \underbrace{K}_{\text{Tolerance}} - \underbrace{○○○}_{\text{Resistance}}$	$56\underline{3} \rightarrow 56 \times 10^{\underline{3}} = 56\ k\Omega$
1/2W	Q R C 1 2 1 K – ○ ○ ○	$15\underline{4} \rightarrow 15 \times 10^{\underline{4}} = 150\ k\Omega$
1/4W	Q R C 1 4 1 K – ○ ○ ○	$10\underline{5} \rightarrow 10 \times 10^{\underline{5}} = 1M\Omega$

3. Chip metal glazed resistor (CH MG R) shape of replacement parts: Chip ()

Rated power	Parts number	Example of expressing capacitance
1/4W	$\underbrace{QRS}_{\text{Metal glazed Resistor}}\ \underbrace{14}_{\text{Rated power}}\ \underbrace{8}_{\text{Shape}}\ \underbrace{J}_{\text{Tolerance}} - \underbrace{○○○}_{\text{Resistance}}$	$39\underline{3} \rightarrow 39 \times 10^{\underline{3}} = 39\ k\Omega$
1/10W	Q R S A 0 8 J – ○ ○ ○	$24\underline{4} \rightarrow 24 \times 10^{\underline{4}} = 240\ k\Omega$

4. Ceramic capacitor (C Cap.) shape of replacement parts: Disk with leads ( )

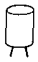
Rated voltage	Parts number	Example of expressing capacitance
50V	$\underbrace{QCS}_{\text{Ceramic capacitor}}\ \underbrace{1}_{\text{Shape}}\ \underbrace{1H}_{\text{Rated voltage}}\ \underbrace{J}_{\text{Tolerance}} - \underbrace{\circ\circ\circ}_{\text{Capacitance}}$	5RO → 5 pF (5.0 pF)
500V	Q C S 1 2 H J – ○ ○ ○	$22\underline{0} \rightarrow 22 \times 10^{\underline{0}} = 22$ pF

5. Chip ceramic capacitor (CH C Cap.) shape of replacement parts: Chip ()

Rated voltage	Parts number	Example of expressing capacitance
50V	$\underbrace{QCS}_{\text{Ceramic capacitor}}\ \underbrace{8}_{\text{Shape}}\ \underbrace{1H}_{\text{Rated voltage}}\ \underbrace{J}_{\text{Tolerance}} - \underbrace{\circ\circ\circ}_{\text{Capacitance}}$	$22\underline{1} \rightarrow 22 \times 10^{\underline{1}} = 220$ pF
50V	Q C Y 8 1 H K – ○ ○ ○	$10\underline{2} \rightarrow 10 \times 10^{\underline{2}} = 1000$ pF
50V	Q C F 8 1 H Z – ○ ○ ○	$47\underline{3} \rightarrow 47 \times 10^{\underline{3}} = 0.047\ \mu$F

6. Mylar capacitor (M Cap.) shape of replacement parts: Leads in the same direction ( )

Rated voltage	Parts number	Example of expressing capacitance
50V	$\underbrace{QFM}_{\text{Mylar capacitor}}\ \underbrace{1}_{\text{Shape}}\ \underbrace{1H}_{\text{Rated voltage}}\ \underbrace{K}_{\text{Tolerance}} - \underbrace{\circ\circ\circ}_{\text{Capacitance}}$	$15\underline{3} \rightarrow 15 \times 10^{\underline{3}} = 0.015\ \mu$F
100V	Q F M 4 2 A K – ○ ○ ○	$12\underline{4} \rightarrow 12 \times 10^{\underline{4}} = 0.12\ \mu$F
200V	Q F M 4 2 D M – ○ ○ ○	$10\underline{2} \rightarrow 10 \times 10^{\underline{2}} = 1000$ pF

7. Electrolytic capacitor (E Cap.) shape of replacement parts: Leads in the same direction ()

* The tolerance in capacitance of QET○○□R-○○○ is equal to that of QET○○□M-○○○.

Rated voltage	Parts number	Example of expressing capacitance
6.3V	$\underbrace{QET}_{\text{Electrolytic capacitor}}\ \underbrace{4}_{\text{Shape}}\ \underbrace{0J}_{\text{Rated voltage}}\ \underbrace{R}_{\text{Tolerance}} - \underbrace{\circ\circ\circ}_{\text{Capacitance}}$	$47\underline{5} \rightarrow 47 \times 10^{\underline{5}} = 4.7\ \mu$F
10V	Q E T 4 1 A R – ○ ○ ○	$47\underline{6} \rightarrow 47 \times 10^{\underline{6}} = 47\ \mu$F
16V	Q E T 4 1 C R – ○ ○ ○	$47\underline{7} \rightarrow 47 \times 10^{\underline{7}} = 470\ \mu$F
25V	Q E T 4 1 E R – ○ ○ ○	$10\underline{8} \rightarrow 10 \times 10^{\underline{8}} = 1000\ \mu$F
35V	Q E T 4 1 V R – ○ ○ ○	$47\underline{4} \rightarrow 47 \times 10^{\underline{4}} = 0.47\ \mu$F
50V	Q E T 4 1 H R – ○ ○ ○	$10\underline{5} \rightarrow 1 \times 10^{\underline{5}} = 1\ \mu$F
63V	Q E T 4 1 J R – ○ ○ ○	$47\underline{6} \rightarrow 47 \times 10^{\underline{6}} = 47\ \mu$F
100V	Q E T 4 2 A R – ○ ○ ○	$22\underline{7} \rightarrow 22 \times 10^{\underline{7}} = 220\mu$F
160V	Q E T 4 2 C R – ○ ○ ○	$22\underline{5} \rightarrow 22 \times 10^{\underline{5}} = 2.2\mu$F
250V	Q E T 4 2 E R – ○ ○ ○	$33\underline{5} \rightarrow 33 \times 10^{\underline{5}} = 3.3\ \mu$F

GX-N7U/UT, GX-N4U/UT PRINTED CIRCUIT BOARD LIST

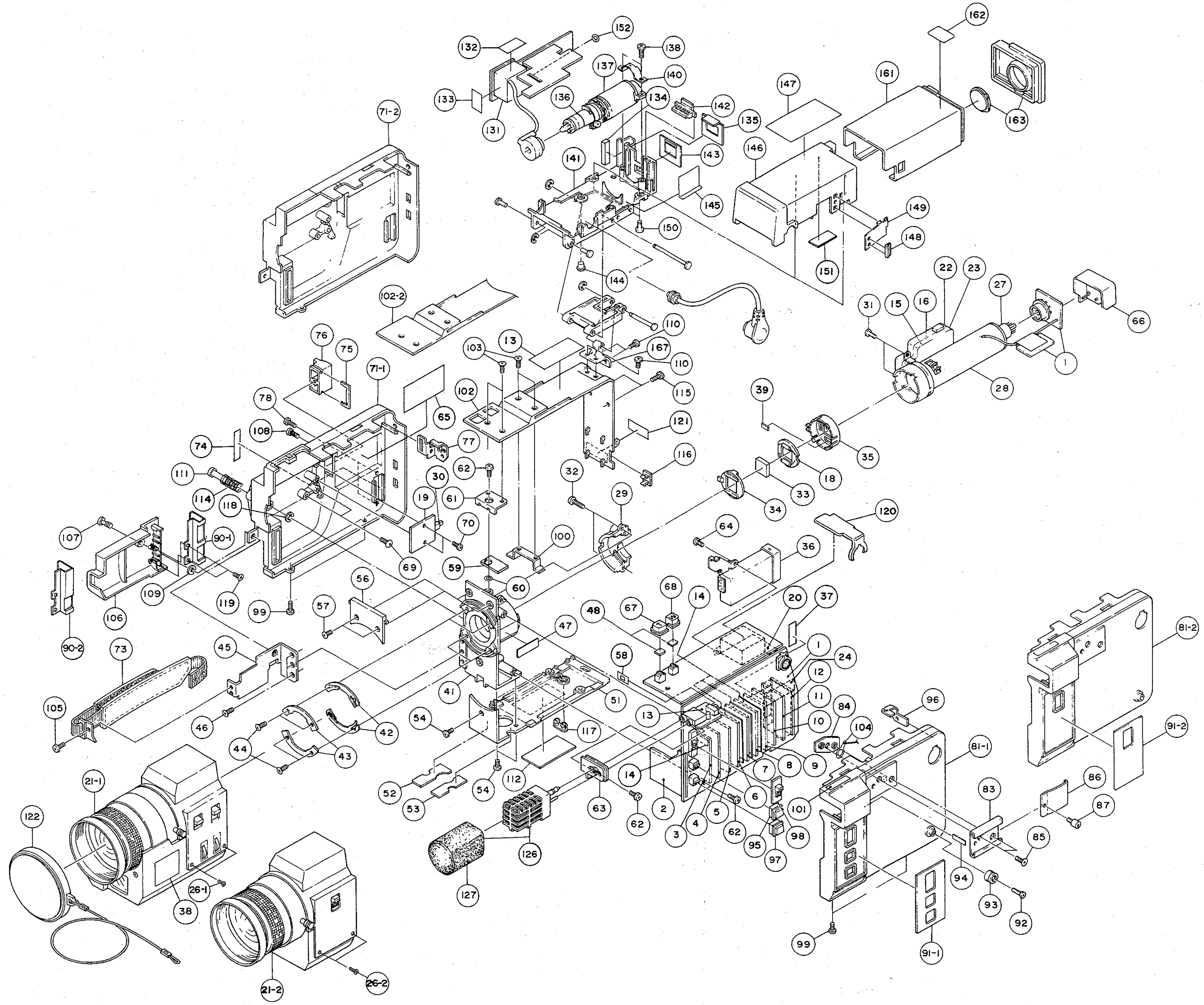
PART NAME	PART NO.		Interchangeability
	GX-N7U/UT	GX-N4U/UT	
MOTHER BOARD	CA-1071C	CA-1073B	X
PREAMP BOARD	CA-2071A	CA-2071A	——
AUDIO BOARD	CA-A005A	CA-A004A	X
PREPROCESS BOARD	CA-B001A	CA-B001A	——
CARRIER MATRIX BOARD	CA-C001A	CA-C001A	——
DETECTOR BOARD	CA-D001A	CA-D001A	——
BLACK SET/AUTO WHITE BOARD	CA-E005A	CA-E003A	X
COLOR GAMMA BOARD	CA-F001A	CA-F001A	——
CDP BOARD	CA-G001A	CA-G001A	——
AGC BOARD	CA-H001A	CA-H001A	——
ENCODER BOARD	CA-J003A	CA-J003A	——
SSG BOARD	CA-K001A	CA-K001A	——
VTR TRIG. & BATT. ALARM BOARD	CA-L003A	CA-L003A	——
MIC BOARD	CA-M003A	CA-M004A	X
EVF BOARD	CA-6071A	CA-6071A	——
BIAS LIGHT BOARD	CA-8071A	CA-8071A	——

X: Interchangeability does not exist.

MAIN PART DIFFERENCES BETWEEN GX-N7U/UT AND GX-N4U/UT

Page	View No.	PART NAME	PART NO.			
			GX-N7U	GX-N7UT	GX-N4U	GX-N4UT
9	1	Mother Board	CA-1071C	CA-1071C	CA-1073B	CA-1073B
″	2	Audio Board	CA-A005A	CA-A005A	CA-A004A	CA-A004A
″	6	Black Set/Auto White Board	CA-E005A	CA-E005A	CA-E003A	CA-E003A
″	13	Mic Board	CA-M003A	CA-M003A	CA-M004A	CA-M004A
″	21	Zoom Lens	CLC02206-B-BFZ	CLC02206-B-BFZ	CLC03206-A-B	ClC03206-A-B
″	26	Tap Screw	C41474-5	C41474-5	SPSJ1760M	SPSJ1760M
10	67	Zoom Knob-T	CM42452-A01	CM42452-A01	——	——
″	68	Zoom Knob-W	CM42453-A01	CM42453-A01	——	——
″	71	Body Cover-L-Ass'y	N7U-BCLA	N7U-BCLA	N4U-BCLA	N4U-BCLA
″	81	Body Cover-R-Ass'y	N7U-BCR	N7U-BCR	N4U-BCR	N4U-BCR
″	90	Socket Holder	CM42620-A01	CM42620-A01	CM42620-A02	CM42620-A02
″	91	Control Plate	CM31209-001	CM31209-00	CM31209-003	CM31209-003
″	94	Mic Label	CM42454-A01	CM42454-A01	——	——
″	95	Push Knob	CM42448-A02	CM42448-A02	——	——
″	97	Push Knob	CM42448-A01	CM42448-A01	——	——
″	98	Slide Knob	CM42449-001	CM42449-001	CM42496-001	CM42496-001
″	102	Top & Rear Cover	CM20540-A01-M0	CM20540-A01-M0	CM20540-A02-M0	CM20540-A02-M0
″	112	Name Plate	CM31245-018	CM31245-018	CM31245-024	CM31245-024
7	126	Mic	CE40698-00D	CE40698-00D	CE40705-00D	CE40705-00D
18	8	Inst. Book	GX-N7U-IB-A	GX-N7UT-IB-A	GX-N4U-IB-A	GX-N4UT-IB-A
″	17	Packing Case	CP20065-043	CP20065-038	CP20065-044	CP20065-037

EXPLODED VIEW OF CAMERA BODY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26-2

SYSTEM ASSEMBLY REPLACEMENT PARTS LIST

VIEW NO.	SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
1		⚠	————	MOTHER BOARD	CA-1071C, For GX-N7U/UT
"		⚠	————	MOTHER BOARD	CA-1073B, For GX-N4U/UT
2		⚠	CA-A005A	AUDIO BOARD	For GX-N7U/UT
"		⚠	CA-A004A	AUTIO BOARD	For GX-N4U/UT
3		⚠	CA-B001A	PREPROCESS BOARD	
4		⚠	CA-C001A	CARRIER MATRIX BOARD	
5		⚠	CA-D001A	DETECTOR BOARD	
6		⚠	CA-E005A	BLACK SET/ AUTO WHITE BOARD	For GX-N7U/UT
"		⚠	CA-E003A	BLACK SET/ AUTO WHITE BOARD	For GX-N4U/UT
7		⚠	CA-F001A	COLOR GAMMA BOARD	
8		⚠	CA-G001A	CDP BOARD	
9		⚠	CA-H001A	AGC BOARD	
10		⚠	CA-J003A	ENC. BOARD	
11		⚠	CA-K001A	SSG BOARD	
12		⚠	CA-L003A	VTR TRIG. & BATT. ALARM BOARD	
13		⚠	CA-M003A	MIC BOARD	For GX-N7U/UT
"		⚠	CA-M004A	MIC BOARD	For GX-N4U/UT
14		⚠	CM42607-001	Module Insulator	Not included on the module board
15			CM42485-001	P.AMP. Insulator	
16		⚠	CA-2071A	PREAMP BOARD	
18		⚠	————	BIAS LIGHT BOARD	CA-8071A
20		⚠	CM42706-00A	Insulator	
21-1			CLC02206-B-BFZ	Zoom Lens	For GX-N7U/UT
"			DA7-0692-002	Hood	Included Zoom Lens (View No. 21-1)
21-2			CLC03206-A-B	Zoom Lens	For GX-N4U/UT
"			DA7-0692-002	Hood	Included Zoom Lens (View No. 21-2)
22			CM31200-001	Shield Cover	
23			CM31201-00A	Shield Case	
24		⚠	CM42691-00A	Shield Insulator	
26-1			C41474-5	Tap Screw	×2 For GX-N7U/UT
26-2			SPSJ1760M	Tap Screw	×2 For GX-N4U/UT
27		⚠	S4250	Pickup Tube	1/2" Newvicon
28		⚠	CE40688-A0A	Def. Yoke	
29			CM31196-001	DY Holder	
30			QSP2E22-C01	Switch	
31			SPSP2603Z	Screw	×2 For securing the Preamp Board
32			SPSP2606Z	Screw	×2 For securing the DY Holder
33			CJ39625-B0B	L P Filter Ass'y	
34			CM20531-A01	Light Guide	
35			CM20532-001	LPF Holder	
36			CE40687-C0A	SW Regulator	
37			C40924	Caution Label	
38			CM42654-001	AF Label	
39			CM40992-010	Cushion	
41			CM10320-E0A	Chassis	
42			CM42434-002	Mount Spring	×2
43			CM42433-001	Mount Plate	×3
44			SSEK2045	Mini Screw	×4
45			CM31240-C02	Grip Bracket	
46			SHSK2040M	Screw	×3 For securing the Grip Bracket
47			CM40442-003	Insulator	
48			CM42780-001	Double Face	×2
51			CM20539-00A-MO	Bottom Base Ass'y	
52			CM42457-001	Tripod Leather L	Left side
53			CM42458-001	Tripod Leather R	Right side

VIEW NO.	SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
54			SHSK2040M	Screw	×3 For securing the Bottom Base Ass'y
56		⚠	CM42439-001	Front Cover	
57			SHSK2040M	Screw	×2 For securing the Front Cover
58			CM42795-A01	Blind Rubber	
59			CM42671-001	Top Insulator-F	
60			CM42883-002	Spacer	
61			CM42437-001	PB Bracket	
62			SPSP2606Z	Screw	×3 For securing the Mother Board
63		⚠	CM42440-001	Mic Cover	
64			SPSK2045M	Mini Screw	For securing the SW Regulator
65			C41632-5	Caution Label	
66			CM42594-001	Socket Insulator	
67			CM42452-A01	Zoom Knob-T	GX-N7U/UT only
68			CM42453-A01	Zoom Knob-W	GX-N7U/UT only
69			SBSB2606Z	Tap Screw	×2
70			C41474-4	Tap Screw	×2
71-1		⚠	N7U-BCLA	Body Cover-L-Ass'y	Left side, For GX-N7U/UT
71-2		⚠	N4U-BCLA	Body Cover-L-Ass'y	Left side, For GX-N4U/UT
73			CM31211-A0A	Belt Ass'y	
74			CM40869-001	Caution Label	
75			CM42498-001	Knob Lock	
76			CM42447-001	VTR Knob	
77			CM42615-002	Hook Bracket (B)	
78			SPSH2050M	Mini Screw	×2
81-1		⚠	N7U-BCR	Body Cover-R-Ass'y	Right side, For GX-N7U/UT
81-2		⚠	N4U-BCR	Body Cover-R-Ass'y	Right side, For GX-N4U/UT
83			CM42443-A01	Accessory Shoe	
84			CM42473-A01	Plate Nut-S	
85			SSEP2604	Screw	×2
86			CM42442-001	Shoe Spring	
87			CM42444-001	Shoe Spring	
90-1			CM42620-A01	Socket Holder	For GX-N7U/UT
90-2			CM42620-A02	Socket Holder	For GX-N4U/UT
91-1			CM31209-001	Control Plate	For GX-N7U/UT
91-2			CM31209-003	Control Plate	For GX-N4U/UT
92			C41474-4	Tap Screw	
93			CM42503-A01	CG Hook	
94			CM42454-A01	Mic Label	GX-N7U/UT only
95			CM42448-A02	Push Knob	GX-N7U/UT only
96			CM42614-A01	Plate Nut-R (A)	
97			CM42448-A01	Push Knob	GX-N7U/UT only
98			CM42449-001	Slide Knob	For GX-N7U/UT
〃			CM42496-001	Slide Knob	For GX-N4U/UT
99			SPSH2050M	Mini Screw	×4
100			CM42613-A01	Plate Nut T	
101			CM40868-003	Caution Label	
102-1		⚠	CM20540-A01-MO	Top & Rear Cover	For GX-N7U/UT
102-2		⚠	CM20540-A02-MO	Top & Rear Cover	For GX-N4U/UT
103			SPSK2045M	Mini Screw	×4
104			A76382-A	Lug	
105			SDSP2606M	Screw	
106			CM31210-003	Grip Cover	
107			CM42446-A01	G Cover Screw	
108			SPSK2040R	Mini Screw	
109			REE2000	E Ring	
110			PSSK2045M	Mini Screw	×4
111			CM42687-001	Lens Lock Screw	
112			CM31245-018	Name Plate	For GX-N7U/UT
〃			CM31245-024	Name Plate	For GX-N4U/UT
113			CM41775-5	Caution Label	
114			CM42688-001	Spring	

VIEW NO.	SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
115			SPSH2050M	Mini Screw	x 2
116			CM42455-A01	VTR SW Cap	
117			CM42493-001	VR Cap	
118			REE2500	E Ring	
119			C41474	Tap. Screw	x 2
120			CM42817-001	Top Insulator-R	
121			C41777	UL Label	
122			CM42957-A0A	Lens Cap Ass'y	With string
126			CE40698-00D	Mic	STEREO, For GX-N7U/UT
″			CE40705-00D	Mic	MONO, For GX-N4U/UT
127			GU-PW-080-PUE	Wind Guard	Included Mic (View No. 126)
131			————	EVF Board	CA-6071A
132			C41708-3	Caution Label	
133			CM42752-002	Caution Label	High Voltage Dangerous
134			CM42715-001	CRT Rubber	
135			CM42659-001	CRT Shade	
136		⚠	M01JGU9WB	Picture Tube	1/2" B/W
137		⚠	CE40679-A0A	DY Ass'y	
138			C41474-2	Tap Screw	x 2 For fastening the DY Ass'y to the cover
140			CM42589-001	DY Holder	
141		⚠	CM31308-00A-MO	EVF Bottom Ass'y	
142			CM42811-A01	Light Guide	For diffusing the LED light
143			CM42463-C01	Indicator Film	
144			CM30564-001	Hole Plug	
145			CM42717-001	EVF Insulator	
146		⚠	CM10323-001-MO	EVF Cover (T)	Top side
147			CM40100-005	Caution Label	
148			CM42465-003	Lock Knob	
149			CM42466-D01	Lock Spring	
150			C41474-2	Tap Screw	x 2 For fastening the EVF cover
151			CM42771-001	Label	
152			WLS2600	L Washer	
161		⚠	CM31307-00B	Slide Cover Ass'y	
162			CM42665-001	Label Indicator	
163		⚠	CM31212-A01	Eye Cup	
167			CM31297-001	EVF Holder (A)	

PRINTED CIRCUIT BOARD PARTS LIST

1. CA-1071C/CA-1073B MOTHER BOARD

1-1 CA-1071C MOTHER BOARD

CA-1071C is used in GX-N7U/UT and CA-1073B in GX-N4U/UT.
CA-1071C and CA-1073A are not interchangeable with each other.

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
R1120		CE40412-104WYA	CH V R	DY FOCUS
R1121		" -104WYA	"	"
R1122		" -104WYA	"	"
R1123		" -104WYA	"	"
R1124		" -104WYA	"	PHASE SH COMP.
R1126		" -104XYA	"	H BL COMP.-Y
R1127		" -104XYA	"	"
R1128		" -104XYA	"	V BL COMP.-Y
R1129		" -104XYA	"	"
R1130		" -104XYA	"	H BL COMP.-R
R1131		" -104XYA	"	"
R1132		" -104WYA	"	V BL COMP.-R
R1133		" -104WYA	"	"
R1134		" -104WYA	"	SH COMP.-R
R1135		" -104WYA	"	"
R1136		" -104WYA	"	"
R1137		" -104WYA	"	"
R1138		" -104XYA	"	SH COMP.-B
R1139		" -104XYA	"	"
R1140		" -104XYA	"	"
R1141		" -104XYA	"	"
R1142		" -104XYA	"	V BL COMP.-R
R1143		" -104XYA	"	"
R1144		" -104WYA	"	V BL COMP.-B
R1145		" -104XYA	"	"
R1213		" -223XYA	"	AUTO IRIS SET
R1215		" -101WYA	"	BIAS LIGHT
R1241		" -103XYA	"	AW BAL SET
R1242		" -103WYA	"	"
R1243		" -103XYA	"	"
R1244		" -103XYA	"	"
R1261		" -682XYA	"	
R1277		QRS142K-106	MG R	10MΩ 1/4W K
R1305		A76225-205A	V R	FOCUS
R1313		CE40624-105A	V R	TARGET
R1320		CE40412-222XYA	CH V R	DSO GAIN
R1327		" -681XYA	"	H.CENTER
R1331		" -101XYA	"	H.LIN-3
R1332		" -472XYA	"	H.LIN-1
R1333		A75575-332	Thermistor	3.3kΩ
R1339		CE40412-681WYA	CH V R	H. LIN-2
R1349		CE40685-224WYA	"	V.HEIGHT
R1355		CE40412-682XYA	"	V.CENTER
Capacitor				
C1101		CE40713-475WM	CH Tan. E Cap.	4.7μF 10V M
C1102		" -475WM	"	" " "
C1103		" -475WM	"	" " "
C1221		QER40JM-107M	E. Cap.	100μF 6.3V "
C1251		CE40036-475WM	CH Tan. E Cap.	4.7μF 35V "
C1261		CE40713-475XM	CH Tan. E Cap.	4.7μF 10V "
C1300		CJ49511-00A	HV C Cap.	
C1303		QFP32DG-272S	PP Cap.	2700pF 200V G
C1309		QEK41JM-105M	E Cap.	1μF 63V M
C1313		QEE51CK-226B	Tan. Cap.	22μF 16V K
C1315		QEE41VK-105M	Tan. Cap.	1μF 35V "
C1318		QFH52AJ-104M	MM Cap.	0.1μF 100V J
C1319		QER40JM-107M	E Cap.	100μF 6.3V M
C1321		" -107M	E Cap.	" " "

Symbol No.	⚠	Part No.	Parts Name	Remarks
Transformer				
T1301	⚠	CE40665-00A	H V Block	
Coil				
L1301		A49468-201U	Peaking Coil	200μH
L1302		A49468-562U	"	5.6mH
L1303		" -562U	"	
L1304		CE40620-00A	Width Coil	
Diode				
D1231		MA151WA-W	Chip Diode	
D1241		MA151WK-W	"	
D1261		MA3047-L-X	"	
D1262		MA4120 (M.H)-Y	Si Diode (Zener)	
D1263		MA3120 (L-H)-W		
D1264		MA3120 (L-H)-X	Chip Zener Diode	
D1266		MA3120 (L-H)-W	Si Diode (Zener)	
D1267		MA3120 (L-H)-X	Chip Zener Diode	
D1268		MA4068 (L)	Si Diode (Zener)	
D1301		MA151A-W	Chip Diode	
D1302		MA151K-X	"	
D1303		MA157-X	"	
D1304		1S2473H	Si Diode	
Transistor				
Q1101		2SC2778 (B.C)-W	Si Transistor	
Q1102		"	"	
Q1103		"	"	
Q1104		"	"	
Q1105		2SB709 (P-R)-X	"	
Q1201		2SC2778 (B.C)-W	"	
Q1231		2SB709 (P-R)-X	"	
Q1261		2SB970 (Q-S)-W	Chip Transistor	
Q1301		2SD601 (Q,R)-W	"	
Q1302		2SD781	Si Transistor	
Q1303		2SD601A (Q,R)-X	Si Transistor	
Q1304		2SB792 (Q-T)-W	Chip Transistor	
Q1305		2SB792 (Q-T)-X	"	
Q1306		"	"	
Q1307		2SB709 (P-R)-W	"	
Q1308		2SB792 (Q-T)-X	"	
Q1309		2SD601 (Q,R)-X	"	
Q1311		2SB709 (Q-R)-W	"	
Q1312		2SD601 (Q,R)-X	"	
IC				
IC1101		UPC4741G-X	IC	
IC1102		"	"	
IC1103		"	"	
IC1201		UPD4013BG-X	"	
IC1201		MN4013BS-X	IC (M)	
IC1261		UPC4558G-W	IC	
IC1301		NJM3414D	"	
Others				
		CM42883-003	Spacer	
	⚠	CM42607-A01	Insulator	
		CE40677-001	1/2 T Socket	
SW1201		QSS1B12-C01	Switch	
SW1231		QSP1B11-C04	Push Switch	
SW1241		QSS1B43-C01	Slide SW	
SW1261		QSP1B11-C04	Push Switch	
SW1301		"	"	
SW1302		"	"	

1-2. DIFFERENCE BETWEEN CA-1071C AND CA-1073B

CA-1071C and CA-1073B are not interchangeable with each other
The difference is shown below.

Symbol No.	Part No.		Part Name
	CA-1071C	CA-1073B	
R1277	QRS142K-106	——	MG R
D1231	MA151WA-W	——	Chip Diode
Q1231	2SB709 (P-R)-X	——	Si Transistor
SW1231	QSP1B11-C04	——	Push Switch
SW1261	"	——	"
SW1301	"	——	"
SW1302	"	——	"

2. CA-A005A AUDIO BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Capacitor				
CA002		QEE41AK-226B	Tan. Cap.	22μF 10V K
CA005		CE40622-106YM	CH AL E Cap.	10μF 16V M
CA006		CE40621-226YM	"	22μF 6.3V "
CA007		QER40JM-107M	E Cap.	100μF " "
CA008		" -107M	"	" " "
CA012		QEE41AK-226B	Tan. Cap.	22μF 10V K
CA015		CE40622-106YM	CH AL E Cap.	10μF 16V M
CA016		CE40036-105XN	"	1μF 3.5V "
CA017		QER40JM-226M	E. Cap.	22μF 6.3V "
Diode				
DA001		MA151WA-W	Chip Diode	
DA002		MA157-X	"	
Transistor				
QA001		2SC2778 (B,C)-W	Si Transistor	
QA011		"	"	
IC				
ICA001		M51545P-W	IC	

3. CA-A004A AUDIO BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Capacitor				
CA002		QEE41AK-226B	Tan. Cap.	22μF 10V K
CA005		CE40622-106YN	CH AL E Cap.	10μF 16V M
CA008		QER40JM-107M	E Cap.	100μF 6.3V "
CA016		CE40036-105XM	CH AL E Cap.	1μF 16V "
CA017		QER40JM-226M	E Cap.	22μF 6.3V "
Diode				
DA002		MA157-X	Chip Diode	
Transistor				
QA001		2SC2778 (B,C)-W	Si. Transistor	
IC				
ICA001		M51545P-W	IC	

4. CA-B001A PREPROCESS BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RB012		CE40848-223YA	CH V R	Y Gain
Capacitor				
CB001		CE40622-106YM	CH AL E Cap.	10μF 16V M
CB003		" -106YM	"	" "
CB004		CE40036-105XM	CH Tan. E Cap.	1μF 35V "
CB012		CE40713-475WM	"	4.7μ 10V "
CB013		" -475WM	"	" "
Transformer				
TB001		CE40723-00A	4.1MHz trap	
Diode				
DLB001		CE40659-00A	Delay Line	
Transistor				
QB001		2SC2778 (C)-W	Chip Transistor	
QB002		"	"	
QB003		2SA1022 (B,C)-W	"	
QB004		2SC2778 (C)-X	"	
QB005		2SB709 (P-R)-X	Si Transistor	
IC				
ICB001		M51261P-X	IC (M)	

5. CA-C001A CARRIER MATRIX BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RC001		CE40848-222YA	CH V R	PHASE SET-1
RC012		" -222YA	"	PHASE SET-2
RC024		" -103YA	"	DC SET
RC032		ERT-D2FFL601S	Thermistor	
Capacitor				
CC010		CE40713-475WM	CH Tan. E Cap.	4.7μF 10V M
Transformer				
TC001		CE40655-B0A	Phase Transf.	
TC002		CE40653-00A	4.1 MHz BP Transf.	
TC003		CE40654-00A	8.2 MHz Trap	
Diode				
DC001		KV-1236XY	Varicap Diode	
Transistor				
QC001		2SC2778 (B,C)-X	Chip Transistor	
QC002		"	"	
QC003		2SC2778 (B,C)-W	Si Transistor	
QC004		2SC2778 (B,C)-X	Chip Transistor	
QC005		2SA1022 (B,C)-X	"	
QC006		2SC2778 (B,C)-X	"	
QC007		2SC2778 (B,C)-W	Si Transistor	
QC008		"	"	
QC009		2SC2778 (B,C)-X	Chip Transistor	
IC				
ICC001		SN76670 (N)	IC	

6. CA-D001A DETECTOR BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RD024		CE40848-223YA	CH V R	R GAIN
RD025		" -223YA	"	B GAIN
Capacitor				
CD018		QEPA1CM-106M	BP E Cap.	10μF 16V M
CD019		" -106M	"	" " "
Coil				
LD001		CE40344-330YL	Chip Inductor	33μH
LD002		" -330YL	"	"
LD003		" -820YL	"	82μF
LD004		" -820YL	"	"
Transistor				
QD001		2SC2778 (B,C)-W	Si Transistor	
QD002		2SC2778 (B,C)-X	Chip Transistor	
QD003		2SB709 (P-R)-W	"	
IC				
ICD001		HA11748B-X	I.C. (M)	

7. CA-E005A BLACK SET/AUTO WHITE BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RE001		CE40848-223YA	CH V R	A/W B PRE SET
RE002		" -223YA	"	A/W R PRE SET
RE003		" -223YA	"	B BLK SET
RE004		" -223YA	"	R BLK SET
RE005		" -105YA	"	A/W B GAIN
RE006		" -105YA	"	A/W R GAIN
RE007		" -223YA	"	YL BLK SET
RE008		" -683YA	"	YL-R
RE045		A75575-332	Thermistor	3.3kΩ
Capacitor				
CE008		CE40034-685WM	CH Tan. E Cap.	6.8μ 6.3V M
CE009		CE40622-106YM	CH AL E Cap.	10μF 16V M
CE010		" -106YM	"	" " "
CE011		CE40035-225XM	CH Tan. E Cap.	2.2μF " "
CE014		CE40676-474YM	CH AL BP Cap.	0.47μF 50V M
CE015		" -474YM	"	" " "
CE019		QCT81CH-220YLS	CH C Cap.	22pF 16V H
CE021		" -270YLS	"	27pF " "
Diode				
DE001		IS002	Log Diode	
DE002		"	"	
DE003		MA151A-W	Chip Diode	
Transistor				
QE001		2SB709 (Q-R)-X	Chip Transistor	
QE002		2SC2778 (C,D)-X	"	
IC				
ICE001		M51263P-W	IC (M)	
ICE002		NJM082M-X	IC	
ICE003		UPC4558G-X	"	
Others				
		CM42607-002	MDL Insulator	
		CM41805-002	Spacer	

8. CA-E003A BLACK SET/AUTO WHITE BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RE003		CE40848-223YA	CH V R	B BLK SET
RE004		" -223YA	"	R BLK SET
RE007		" -223YA	"	YL BLK SET
CE008		" -683YA	"	YL-R
Capacitor				
CE008		CE40034-685WM	CH Tan. E Cap.	6.8μF 6.3V M
CE009		CE40622-106YM	CH AL E Cap.	10μF 16V M
CE010		" -106YM	"	" " "
CE011		CE40035-225XM	CH Tan. E Cap.	2.2μF " "
CE019		QCT81CH-220YLS	CH C Cap.	22pF 16V J
CE021		" -270YLS	"	27pF " "
Transistor				
QE001		2SB709 (Q-R)-X	Chip Transistor	
QE002		2SC2778 (C,D)-X	"	
IC				
ICE001		M51263P-W	IC (M)	
Others				
		CM42607-002	MDL Insulator	
		CM41805-002	Spacer	

9. CA-F001A COLOR GAMMA BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RF007		CE40848-223YA	CH V R	G IN GAIN
RF011		" -104YA	"	YL-B
RF014		" -102YA	"	R-r
RF015		" -223YA	"	R GAIN
RF016		" -102YA	"	B-r
RF018		" -223YA	"	B GAIN
Capacitor				
CF003		CE40036-105XM	CH Tan. E Cap.	1μF 35V M
CF004		" -105XM	"	" " "
CF005		" -105XM	"	" " "
CF006		CE40621-226YM	CH ALE Cap.	22μF 6.3V "
Transistor				
QF001		2SC2778 (B,C)-X	Chip Transistor	
QF002		"	"	
QF003		2SC2778 (B,C)-W	Si Transistor	
QF004		"	"	
IC				
ICF001		M51264P-X	IC (M)	

10. CA-G001A CDP BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RG002		CE40848-103YA	CH V R	R-Y GAIN
RG014		〃 -102YA	〃	R ADD LEVEL
RG022		〃 -103YA	〃	Y-B GAIN
RG031		〃 -102YA	〃	B ADD LEVEL
Capacitor				
CG013		CE40623-105YM	CH AL E Cap.	1μF 50V M
CG015		CE40706-106YM	CH AL BP Cap.	10μF 6.3V 〃
CG016		CE40622-106YM	CH AL E Cap.	〃 16V 〃
CG027		CE40036-105WM	CH Tan. E Cap.	1μF 35V 〃
CG029		CE40706-106YM	CH AL BP Cap.	10μF 6.3V 〃
CG031		CE40622-106YM	CH AL E Cap.	〃 16V 〃
Coil				
LG001		CE40344-331YL	Chip Inductor	330μH
LG002		〃 -331YL	〃	〃
Diode				
DG001		MA151A-X	Chip Diode	
Transistor				
QG001		2SC2778 (B,C)-X	Chip Transistor	
QG002		〃	〃	
QG003		2SC2778 (B,C)-W	Si Transistor	
QG004		2SC2778 (B,C)-X	Chip Transistor	
IC				
ICG001		MN8029S	IC (M)	
ICG002		〃	〃	
ICG003		BA7020F	IC	

11. CA-H001A AGC BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RH012		CE40848-223YA	CH V R	BURST LEVEL
RH026		〃 -103YA	〃	CHROMA LIMIT
RH043		〃 -223YA	〃	Y KNEE
Capacitor				
CH004		CE40622-106YM	CH AL E Cap.	10μF 16V M
CH007		〃 -106YM	〃	〃 〃 〃
CH008		〃 -106YM	〃	〃 〃 〃
CH009		CE40623-474YM	〃	0.47μF 50V 〃
CH010		CE40622-106YM	〃	10μF 16V 〃
CH014		CE40034-685XM	CH Tan. E Cap.	6.8μF 6.3V 〃
CH016		CE40622-106YM	CH AL E Cap.	10μF 16V 〃
Coil				
LH001		CE40344-121YL	Chip Inductor	120μH
Diode				
DH001		MA151A-W	Chip Diode	
DH002		MA151A-X	〃	
DH003		MA151K-X	〃	
DLH001		CE40657-B0A	Delay Line	
Transistor				
QH001		2SC2778 (B,C)-W	Si Transistor	
QH002		2SB709 (P-R)-W	Chip Transistor	
QH003		2SC2778 (B,C)-W	Si Transistor	
QH004		2SC2778 (B,C)-X	Chip Transistor	
QH005		〃	〃	
QH006		2SB709 (P-R)-X	Si Transistor	
QH007		2SC2778 (B,C)-W	〃	
QH008		〃	〃	
QH009		〃	〃	
QH010		2SB709 (P-R)-X	〃	
IC				
ICH001		M51262P-X	IC	

12. CA-J003A ENC. BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RJ004		CE40848-222YA	CH V R	Y SET UP
RJ006		〃 -103YA	〃	R-Y CARR. BAL
RJ008		〃 -103YA	〃	Y-B CARR. BAL
RJ019		〃 -332YA	〃	SC PHASE
Capacitor				
CJ009		CE40622-106YM	CH AL E Cap.	10μF 16V M
CJ015		〃 -106YA	〃	〃 〃 〃
CJ020		CE40034-685WM	CH Tan. E Cap.	6.8μF 6.3V 〃
Coil				
LJ001		CE40344-101YL	Chip Inductor	100μH
Diode				
DJ001		MA151A-W	Chip Diode	
DJ002		MA157-X	〃	
DJ003		MA151A-X	〃	
Transistor				
QJ001		2SC2778 (B,C)-W	Si Transistor	
QJ002		2SB709 (Q-R)-X	Chip Transistor	
QJ003		2SC2778 (B,C)-W	Si Transistor	
QJ004		〃	〃	
IC				
ICJ001		HA11720MP-W	IC (M)	

13. CA-K001A SSG BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Capacitor				
CK001		CE40622-106YM	CH AL E Cap.	10μF 16V M
CK002		〃 -106YM	〃	〃 〃 〃
CK006		QCT81RH-330YLS	CH C Cap.	33pF 50V J
CK007		CE40676-474YM	CH AL BP Cap.	0.47μF 〃 M
CK008		QCT81CH-100YLS	CH C Cap.	10pF 16V J
CK009		〃 -100YLS	〃	〃 〃 〃
CK010		〃 -7R0YLS	〃	7pF 〃 〃
CK011		QAT3110-100A	Trimmer Cap.	10pF 100V
Transformer				
TK001		CE40658-00A	OSC Transf.	
Coil				
LK001		CE40344-101YL	Chip Inductor	100μH
Diode				
DK001		15V68	Varicap Diode	
Transistor				
QK001		2SC2778 (B,C)-X	Chip Transistor	
IC				
ICK001		HD61907-X	IC (M)	
Others				
		CM42423-001	S S G Shield (B)	
		CM42424-001	S S G Shield (T)	
		CM42497-00A	Insulator	
	⚠	CM42585-A01	SSG Insulator B.	
XK001		CE40673-00B	14MHz Crystal	

14. CA-L003A VTR BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
RL012		CE40848-682YA	CH V R	BATT ALARM SET
Capacitor				
CL001		CE40622-106YM	CL AL E Cap.	10μF 16V M
CL011		〃 -475YM	〃	4.7μF 〃 〃
CL021		〃 -106YM	〃	10μF 〃 〃
CL041		QER41AM-476M	E Cap.	47μF 10V 〃
Diode				
DL002		1S2473H	Si Diode	
DL003		MA4120 (M,H)-Y	Si Diode (Zener)	
DL041		W06A	Si Diode	
Transistor				
QL001		2SC2778 (B,C)-X	Chip Transistor	
QL011		2SD1030 (R)-X	〃	
QL012		2SC2778 (C,D)-W	〃	
IC				
ICL001		M5232L	IC	
Fuse				
FL001		QMF51U1-IR25S	Fuse	1.25A
Others				
		CM42666-001	Earth Bracket	
		A44594-002	Fuse Clip	

15. CA-M003A MIC BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Capacitor				
CM001		CE40036-105WM	CH Tan. E Cap.	1μF 35V M
CM002		〃 -105WM	〃	〃 〃 〃
CM003		〃 -105WM	〃	〃 〃 〃
CM004		〃 -105WM	〃	〃 〃 〃
Transistor				
QM001		2SC2778 (B,C)-X	Chip Transistor	
QM002		〃	〃	
Others				
		CM42906-001	SW Insulator	
JM001		PU55585	Mic Jack	
SWM001		QSS1B12-C01	Switch	

16. CA-M004A MIC BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Capacitor				
CM001		CE40036-105WM	CH Tan. E Cap.	1μF 35V M
CM004		〃 -105WM	〃	〃 〃 〃
Transistor				
QM001		2SC2778 (B,C)-X	Chip Transistor	
QM002		〃	〃	
Others				
		CM42906-001	SW Insulator	

17. CA-2071A PREAMP BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Capacitor				
C2001		QCZ0210-473U	M.P.Cap.	0.047μF 50V M
C2002		CE40034-336XM	CH Tan. E Cap.	33μF 6.3V M
C2003		〃 -336XM	〃	〃 〃 〃
C2004		〃 -336WM	〃	〃 〃 〃
C2006		CE40713-475WM	〃	4.7μF 10V 〃
C2007		CE40036-474WM	CH Tan. E Cap.	0.47μF 35V 〃
C2008		CE40035-106WM	〃	10μF 16V 〃
C2011		CE40345-200YX	Chip Trimer Cap.	20pF 〃 〃
Coil				
L2001		CJ39609-00A	Percival Coil	
L2002		CE40344-101YL	Chip Inductor	100μH
Transistor				
Q2001		2SK316 (Q)-W	F E T	
Q2002		2SA1022 (C)-W	Chip Transistor	
Q2003		2SC2404 (D)-X	〃	
Q2004		〃	〃	
Q2005		2SC2778 (C)-W	〃	
Q2006		2SB709 (P-R)-W	〃	

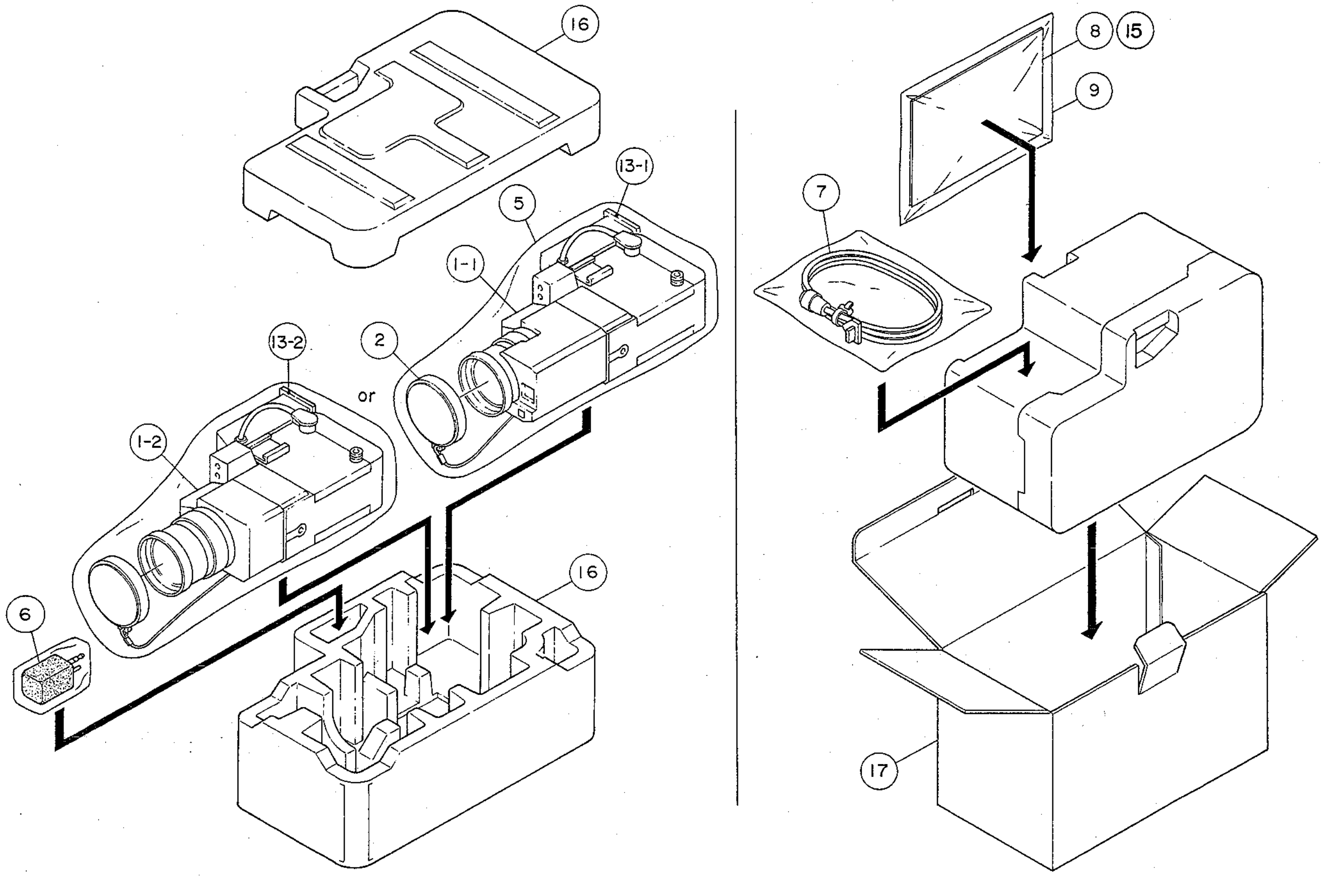
18. CA-6071A EVF BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Resistor				
R6811		ERT-D2FEL200S	Thermistor	
R6820		CE40624-104A	V R	
R6834		〃 -105A	〃	BRIGHT
R6837		〃 -222A	〃	V HEIGHT
R6841		〃 -472A	〃	H. HOLD
R6842		A76225-205A	〃	FOCUS
R6843		CJ39619-00B	R Block	
Capacitor				
C6801		QER40JM-107M	E Cap.	100μF 6.3V M
C6802		QEPA1HM-105	BP E Cap.	1μF 50V 〃
C6804		QER41EM-475M	E Cap.	4.7μF 25V 〃
C6807		QER40JM-226M	〃	22μF 6.3V 〃
C6808		〃 -476M	〃	**47**μF 〃 〃
C6809		〃 -476M	〃	〃 〃 〃
C6811		QEE51VK-684M	Tan. Cap.	0.68μF 35V K
C6812		QER40JM-476M	E Cap.	47μF 6.3V M
C6831		QEU41AM-227M	〃	220μF 10V 〃
C6834		QETA2AM-106	〃	10μF 100V 〃
C6835		QEU41AM-227M	E Cap.	220μF 10V 〃
C6836		〃 -227M	〃	〃 〃 〃
C6837		CE40036-105WM	CH Tan. E Cap.	1μF 35V 〃
C6838		QEE41CK-106B	Tan. Cap.	10μF 16V K
C6839		QFP32DG-103S	PP Cap.	0.01μF 200V G
Transformer				
T6831	⚠	CE40681-00A	H V Block	
Coil				
L6831		A49468-101U	Peaking Coil	100μH
L6832		CE40680-00A	H Lin Coil	
Diode				
D6801		MA151K-W	Chip Diode	
D6802		GL-1NG201	L E D	
D6803		GL-1HD201	〃	
D6804		GL-1HY201	〃	
D6805		MA3120 (L-H)-W	Si Diode (Zener)	
D6831		MA151A-X	Chip Diode	
D6832		MA3120 (L-H)-X	Chip Zener Diode	
Transistor				
Q6802		2SB709 (P-R)-W	Chip Transistor	
Q6831		2SB788 (T)	Si Transistor	
Q6832		2SD975	〃	
IC				
IC6801		AN2510S	IC	
Others				
		CH41007-00A	EVF Cable	
	⚠	CE40678-00A	Socket	

19. CA-8071A BIAS LIGHT BOARD

Symbol No.	⚠	Part No.	Parts Name	Remarks
Others				
PL8001		CE40683-001	Pilot Lamp	
PL8002		CE40683-001	Pilot Lamp	

PACKING



PACKING PARTS LIST

Symbol No.	⚠	Part No.	Parts Name	Remarks
1		—	Camera Body	GX-N7U/UT, GX-N4U/UT
2		CM42957-A0A	Lens Cap Ass'y	
5		CP30004-021	Poly Bag	For the main body
6		CE40698-00D	Stereo Mic	For GX-N7U/UT
6		CE40705-00D	Mono Mic	For GX-N4U/UT
7		VC-444-2E	Camera Cable	
8		GX-N7U-IB-A	Inst. Book	For GX-N7U
"		GX-N7UT-IB-A	Inst. Book	For GX-N7UT
"		GX-N4U-IB-A	Inst. Book	For GX-N4U
"		GX-N4UT-IB-A	Inst. Book	For GX-N4UT
9		CM30751-010	Poly Bag	
13		—	EVF	N7U-EVF
15		SLR-SHEET-A	Lens Information	
16		CP10293-00A	Cushion Ass'y	
17		CP20065-043	Packing Case	For GX-N7U
"		CP20065-038	Packing Case	For GX-N7UT
"		CP20065-044	Packing Case	For GX-N4U
"		CP20065-037	Packing Case	For GX-N4UT

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J.K

Ⓓ GX-N7U/U
GX-N4U/U

JVC

SUPPLEMENTARY

SERVICE MANUAL

COLOR VIDEO CAMERA

MODEL GX-N7U/UT GX-N4U/UT Modified One

ADDITIONAL CHANGES IN PARTS LIST

1. Correction of SW Regulator Interchangeability

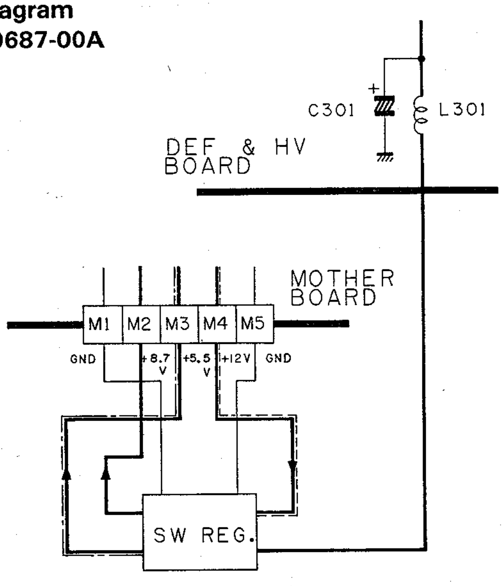
Misprint in SYSTEM ASSEMBLY REPLACEMENT PARTS LIST of the GX-N7U/UT, N4U/UT modified one (No. 5506B/5519B, issued Nov. 1984) has been found.

Please correct Interchangeability according to parts list below.

Page	View No.	Part No.		Part Name	Interchangeability
		Previous	Present		
3	36	CE40687-00A	CE40687-C0A	SW Regulator	×
Remarks		M connector is 5 pin type (M1 ~ M5)	M connector is 6 pin type (M1 ~ M6)		

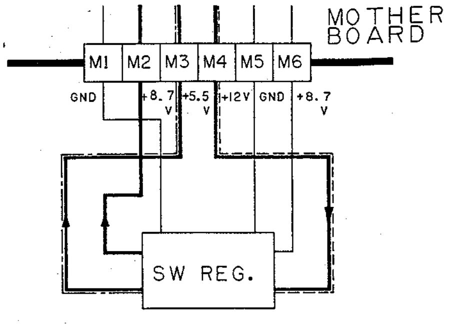
×: Interchangeability does not exist.

Circuit Diagram
CE40687-00A


C301
L301
DEF & HV BOARD
MOTHER BOARD
M1
M2
M3
M4
M5
GND
+8.7 V
+5.5 V
+12V
GND
SW REG.

CE40687-00A

CE40687-C0A (**partially** **CE40687-A0A** **CE40687-B0A**)


MOTHER BOARD
M1
M2
M3
M4
M5
M6
GND
+8.7 V
+5.5 V
+12V
GND
+8.7 V
SW REG.

CE40687-C0A

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GX-N7U/UT : No. 550
GX-N4U/UT : No. 551
June 19

2. Concerning supply of Body Cover Ass'y

Notice on additions and corrections in the part list of GX-N7U/UT, N4U/UT Service Manual (No. 5506/No. 5519), Modified version (No. 5506B/No. 5519B).

From May 1985, the Body Cover is assembled unit when ordered with the part number listed.
Body Cover, Body AL Cover and Earth Foil are needed unavoidably, one unit of them (Body Cover Ass'y) will be supplied.
Because Body Cover, Body AL Cover and Earth Foil can't be separated easily.
One the occation of orders, please consider above-mentioned contents.

Page	View No.	Part No.		Part Name	Remarks
		Previous	Present		
6	71-1	CM10335-A01-MO	———	Body Cover-L	Left side, For GX-N7U/UT
	71-2	CM10335-A03-MO	———	〃	〃 For GX-N4U/UT
	72	CM20537-001	———	Body AL Cover-L	〃
	88	CM42746-001	———	Earth Foil	〃
		———	N7U-BCLA	Body Cover L-Ass'y	〃 For GX-N7U/UT
		———	N4U-BCLA	〃	〃 For GX-N4U/UT
6	81-1	CM10334-001-MO	———	Body Cover-R	Right side, For GX-N7U/UT
	81-2	CM10334-002-MO	———	〃	〃 For GX-N4U/UT
	82	CM20534-001	———	Body AL Cover-R	〃
	88	CM42746-001	———	Earth Foil	〃
		———	N7U-BCR	Body Cover-R Ass'y	〃 For GX-N7U/UT
		———	N4U-BCR	〃	〃 For GX-N4U/UT

JVC COMPANY OF AMERICA

Service & Engineering Division

Head office (East Coast)	41 Slater Drive, Elmwood Park, New Jersey 07407	(201)794-3900
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JVC
VICTOR COMPANY OF JAPAN LIMITED
TV RECEIVER DIVISION 1106 Iwai-city, Ibaraki-prefecture, 306-06, Japan

Printed in Japan
8506 OZAKI
J.K.

JVC

SUPPLEMENTARY

SERVICE MANUAL

COLOR VIDEO CAMERA

MODEL GX-N7U/UT modified one

GX-N7U/E/S-LENS

MODEL CLC02206-B-BFZ

The additional modification in **LENS SERVICE MANUAL (No. 5506L printed in Nov. 1984)** for model GX-N7U/E/S is as follows.

1. Concering supply of LENS IG METER ASS'Y

The ASS'Y PART of the LENS IG METER (IG meter and IG board) will be supplied.
Please make additions according to contents below.

View No.	Part No.	Part Name	Remarks
7 *	DH8-0010-000	IG meter Ass'y	Assembly part (IG meter and IG board)

* Refer to
GX-N7U/E/S—LENS SERVICE MANUAL
P. 39"1—2 Exploded view"

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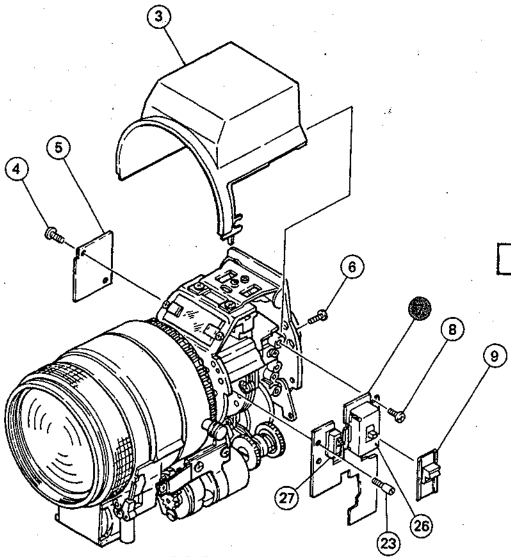
GX-N7U/UT(No.5506C)
GX-N4U/UT(No.5519C)
Feb. 1985

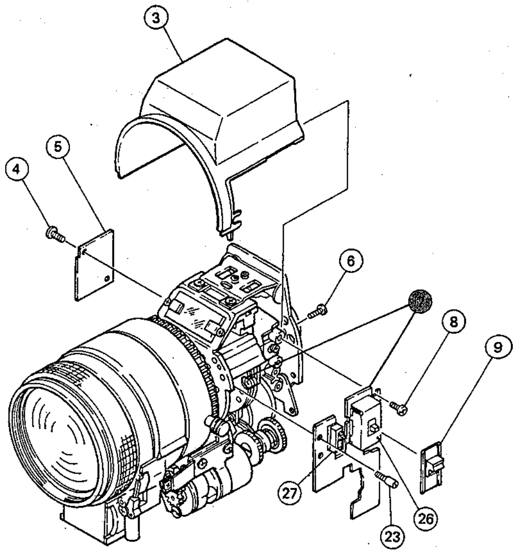
2. Correct of "Exploded view "in GX-N7U/E/S-LENS SERVICE MANUAL

2-1 Correction of LENS IG METER ASS'Y

Item "**1-2 Exploded view (p.39)**" in GX-N7U/E/S-LENS SERVICE MANUAL has been printed by mistake. Please correct the illustration as follows.



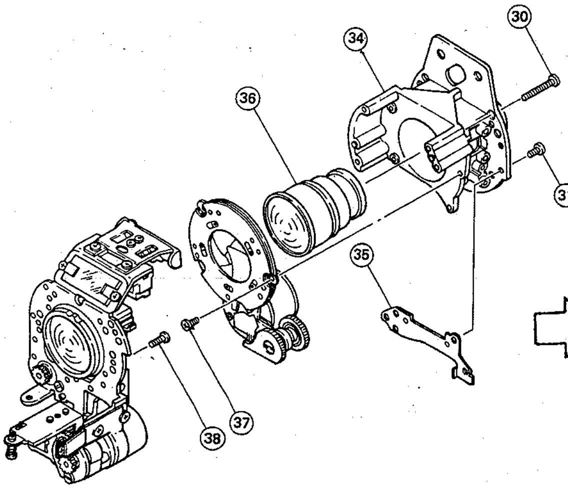
MISPRINT



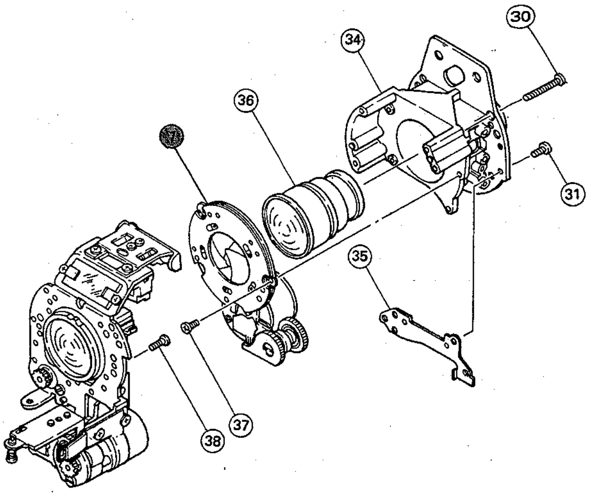
CORRECT PRINT

2-2 Correction of LENS IG METER ASS'Y

Item "**1-4 Exploded view (P.41)**" in GX-N7U/E/S-LENS SERVICE MANUAL has been printed by mistake. Please correct illustration as follows.



MISPRINT



CORRECT PRINT

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TV RECEIVER DIVISION 1106 IW Iwai-city, Ibaraki-prefecture. 306-06, Japan

Printed in
8502
N. S

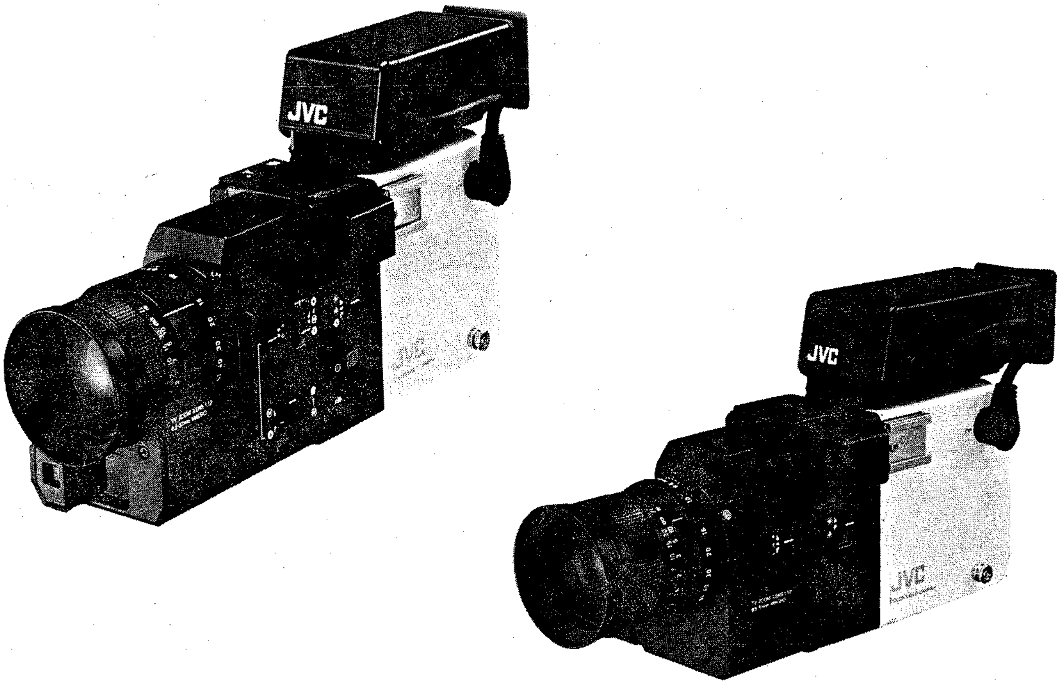
JVC

SUPPLEMENTARY

SERVICE MANUAL

COLOR VIDEO CAMERA

MODEL GX-N7U/UT
GX-N4U/UT Modified One



CONTENTS

1. INTRODUCTION
2. ADJUSTMENT
3. PARTS LIST
4. STANDARD CIRCUIT DIAGRAM

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GX-N7U/UT : No. 5506B
GX-N4U/UT : No. 5519B
Nov. 1984

GX-N7U/UT
GX-N4U/UT Modified One
INTRODUCTION

CONTENTS

1. CHANGES ON PRESENTLY USED PC BOARDS
2. ADJUSTMENT

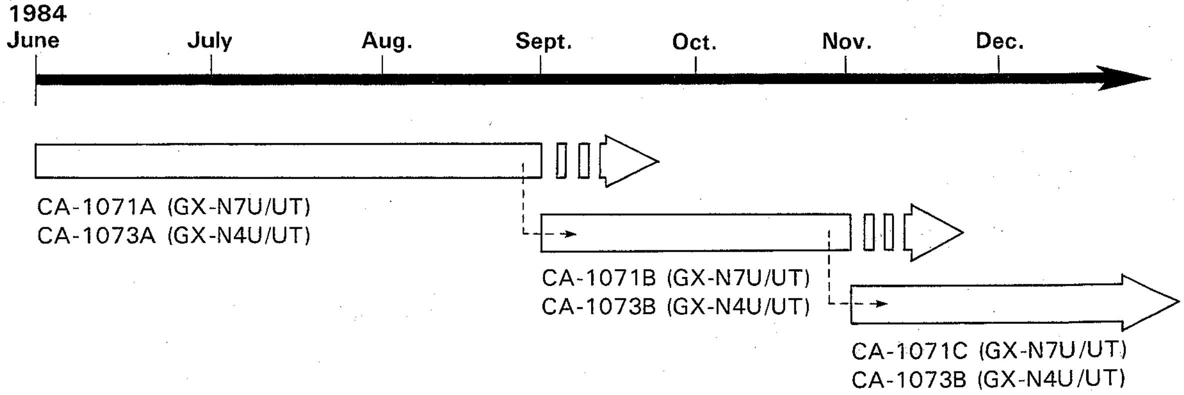
GX-N7U/UT : No. 5506B
GX-N4U/UT : No. 5519B
Nov. 1984

Additions and partial changes/corrections on GX-N7U/UT, GX-N4U/UT SERVICE MANUAL

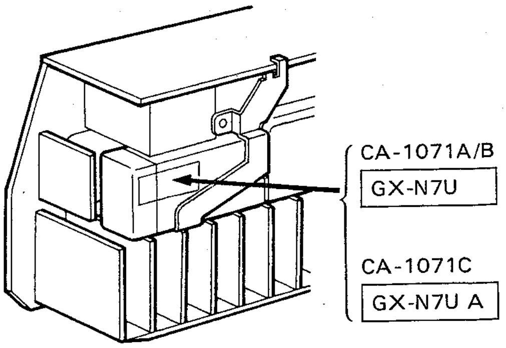
- * You are advised of the following additions and changes/corrections effected on Service Manual **No. 5506/5519** for **GX-N7U/UT, GX-N4U/UT.** Please incorporate the necessary additions and changes/corrections in accordance with the contents of this notice.
- * As for those sections not specifically mentioned herein, descriptions in the previously issued Service Manual remain effective.

1. CHANGES ON PRESENTLY USED PC BOARDS

1. During the course of production, certain PC boards employed on the deivice have been changed. Particularly exercise care as to these changes when conducting post-sales service work.


1984
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
CA-1071A (GX-N7U/UT)
CA-1073A (GX-N4U/UT)
CA-1071B (GX-N7U/UT)
CA-1073B (GX-N4U/UT)
CA-1071C (GX-N7U/UT)
CA-1073B (GX-N4U/UT)

2. Outline of Changes

Board No.	**CA-1071A/1073A→CA-1071B/1073B**	**CA-1071B→CA-1071C**
Change	Use of certain parts was shifted among a portion of module boards, resulting in changes of a part of circuits.	While the circuit structure remains the same, the connection method was changed among certain module boards.
Discrimination method	Confirm the PC board numbers.	 CA-1071A/B GX-N7U CA-1071C GX-N7U A

o Module Boards Employed
(GX-N7U/UT)

Board name	CA-1071A	CA-1071B	CA-1071C	Interchangeability
Mother board	CA-1071A	CA-1071B	CA-1071C	o (*)
Audio	CA-A001A	CA-A003A	CA-A005A	×
Pre-process	CA-B001A	←	←	o
Carrier matrix	CA-C001A	←	←	o
Detector	CA-D001A	←	←	o
Black set/Auto white	CA-E001A	CA-E004A	CA-E005A	×
Color γ	CA-F001A	←	←	o
CDP	CA-G001A	←	←	o
AGC	CA-H001A	←	←	o
Encoder	CA-J001A	CA-J003A	←	×
SSG	CA-K001A	←	←	o
VTR trig./Batt. Alarm	CA-L001A	CA-L003A	←	×
MIC	CA-M001A	CA-M003A	←	×

(*) CA-1071 includes all PC boards A through M.

(GX-N4U/UT)

Board name	CA-1073A	CA-1073B	Interchangeability
Mother board	CA-1073A	CA-1073B	o (*)
Audio	CA-A002A	CA-A004A	×
Pre-process	CA-B001A	←	o
Carrier matrix	CA-C001A	←	o
Detector	CA-D001A	←	o
Black set	CA-E003A	←	o
Color γ	CA-F001A	←	o
CDP	CA-G001A	←	o
AGC	CA-H001A	←	o
Encoder	CA-J001A	CA-J003A	×
SSG	CA-K001A	←	o
VTR trig./Batt. Alarm	CA-L001A	CA-L003A	×
MIC	CA-M002A	CA-M004A	×

(*) CA-1073 includes all PC boards A through M.

- Refer to the STANDARD CIRCUIT DIAGRAM for details of the changes made to the boards.
- Refer to the PARTS LIST concerning the parts utilized in each board.

2. ADJUSTMENT

1. This is to inform you that the following additions to the adjustment methods for the **GX-N7U/UT** and **GX-N4U/UT** have been made. Refer to **ADJUSTMENT Modified One** for detailed adjustment procedures.

Item	VR No.	Board Name	Page number
DSO GAIN CHECK	R320	DEF & HV BOARD	15
Y_L+B Adjustment	R11	GAMMA BOARD	25

2. This is to inform you that new methods have been developed that allow a higher precision adjustment of the **GX-N7U/UT** and **GX-N4U/UT.** Refer to **ADJUSTMENT Modified One** for detailed adjustment procedures.

Item	Page Number	Remarks
2-7. H. WIDTH, H. LIN Adjustment	17	Completely new method
3-3. BL SH COMP.-Y Adjustment	21	Change the Test point from (B8) to VIDEO OUT
3-10. R'GAIN, B'GAIN Adjustment	25	Change the Color Bar Pattern to Grey Scale Pattern
3-16. R, B BL SH COMP. Adjustment	30	Change the Test point from (J5) to (F12) and from (J6) to (F13)

- The ADJUSTMENT Modified One contained in this supplement is the revised edition that contains the contents of 1 and 2.
- This ADJUSTMENT Modified One contains all adjustment procedures. Please consult this publication when making adjustments to the GX-N7U/UT and GX-N4U/UT in the future.

Printed in Japan
8411 OZAKI
M.S.

GX-N7U/UT
GX-N4U/UT Modified One
ADJUSTMENT

CONTENTS

MEASURING INSTRUMENTS, TOOLS AND FIXTURES FOR ADJUSTMENTS 2
INSTRUMENTS CONNECTIONS AND SET UP 3
PRIOR TO STARTING ADJUSTMENT 3
MAIN PARTS ARRANGEMENT 4
LOCATIONS OF BOARDS AND TEST POINTS 6
ADJUSTMENTS LOCATION 9
ADJUSTING STEP 10
1. ADJUSTMENT OF THE SSG (SYNC SIGNAL GENERATOR) 13
2. ADJUSTMENT OF THE DEFLECTION SYSTEM 13
3. ADJMUSTMENT OF THE SIGNAL SYSTEM 19
4. ADJUSTMENT OF THE ELECTRONIC VIEWFINDER 39

GX-N7U/UT : No. 5506B
GX-N4U/UT : No. 5519B
Nov. 1984

MEASURING INSTRUMENTS, TOOLS AND FIXTURES FOR ADJUSTMENTS

■ MEASURING INSTRUMENTS

1. **Oscilloscope** 1
2. **Color monitor TV (NTSC-type)** 1
   Color temperature: 9,300K.
3. **Lights** .... 1 or 2
   Color temperature: 3,200K.
4. **Frequency counter** 1
5. **DC voltmeter** 1
6. **Power supply** .... one each
   1) **AC adaptor**
      CV-AC212 or CV-AC212 (S) (in USA)
      CV-AC312 or CV-AC312 (S) (in CANADA)
      CV-AC222 or CV-AC222 (S) (in CHILE)
   2) **Camera cable**
      VC-444-2E and VC-409-3 (in CHILE)
      VC-444-2E and VC-408-3 (in USA and CANADA)
7. **Vectorscope (NTSC-type)** 1
   Used only if necessary

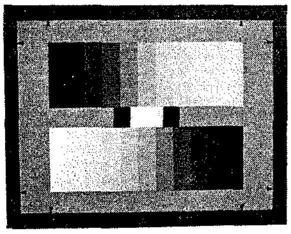
■ TOOLS AND FIXTURES

1. PATTERN

(Note)
Reflection-type patterns eventually suffer from drops in signal output level or loss of output uniformity. Periodic replacement is recommended.

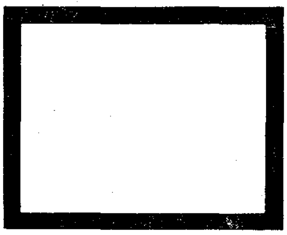
* When reflection-type patterns are used, there will be slight differences in hue and the output will be reduced.

(Gray scale pattern)



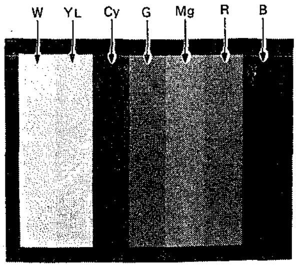
* GS-2A
Reflection-type (γ = 2.2)

(White pattern)



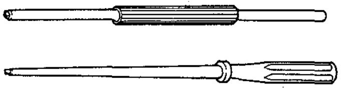
* WC-2A
Reflection-type

(Color bar pattern)

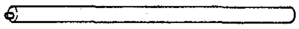


Reflection-type : CC-2A *
Transmission-type : CC-2T *

2. DRIVERS

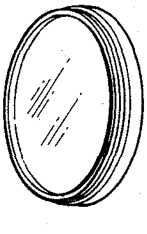


Adj. driver



Back focus adj. driver **A-7541** *

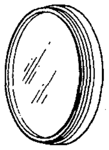
3. RED FILTER



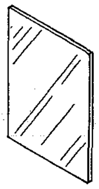
*** R60-46S** (46ϕ)

Equivalent filter using KODAK wratten No. 25 gelatin filter

4. COLOR TEMP. CONVERSION FILTER

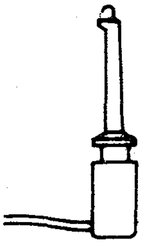


1. W4 Color temperature conversion filter (46ϕ)



2. KODAK wratten No.80B gelatin filter

5. PIN CLIP

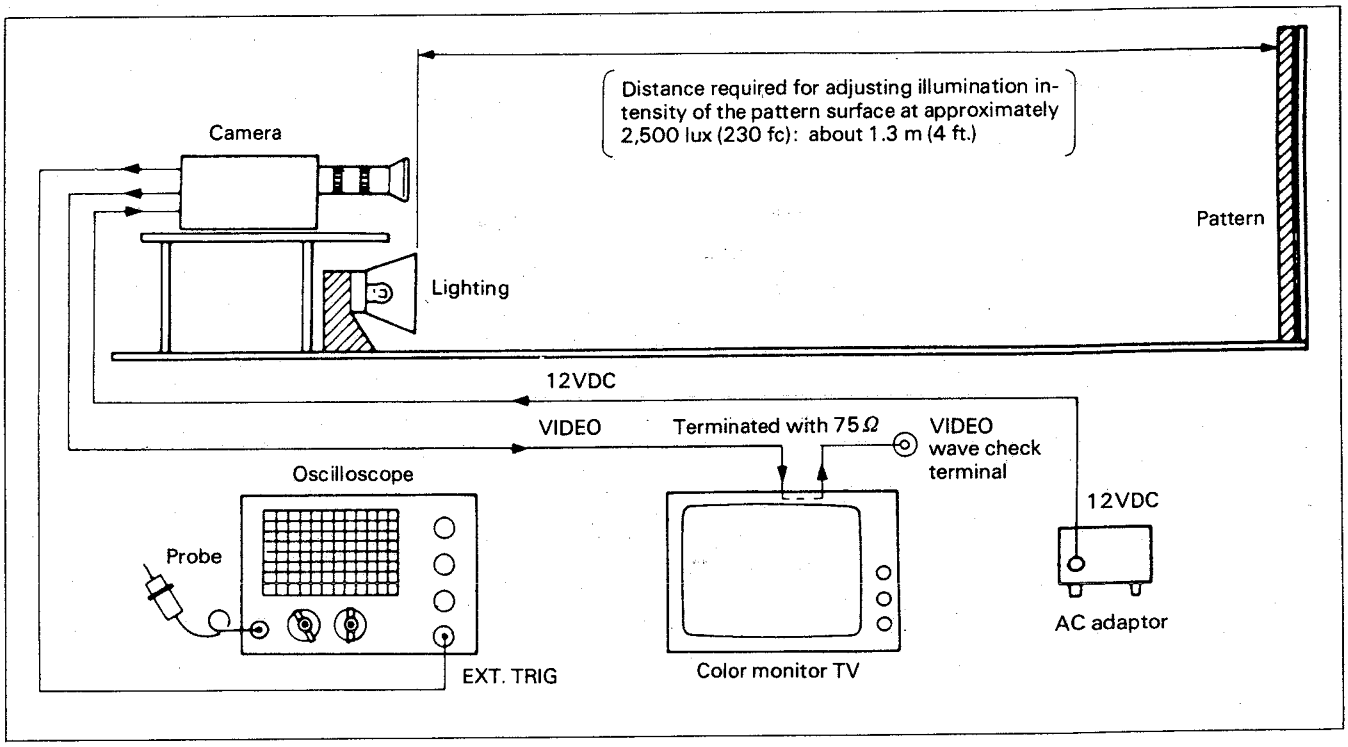


*** MJ-025**

Slightly bending the pin tip facilitates its use.

(Note)
Parts marked with an asterisk (*) can be ordered from the following section:
PARTS SECTION OF THE SALES ENGINEERING DEPARTMENT, TELEVISION RECEIVER DIVISION.

INSTRUMENT CONNECTIONS AND SETUP


Distance required for adjusting illumination intensity of the pattern surface at approximately 2,500 lux (230 fc): about 1.3 m (4 ft.)
Camera
Pattern
Lighting
12VDC
VIDEO
Terminated with 75Ω
VIDEO wave check terminal
Oscilloscope
12VDC
Probe
AC adaptor
EXT. TRIG
Color monitor TV

PRIOR TO STARTING ADJUSTMENT

(1) AGING A NEW PICKUP TUBE
New pickup tubes must be aged (run) at least 2 – 3 hours to stabilize their characteristics. During aging, be sure to adjust V. HEIGHT VR of the camera so that scanning is as wide as possible. Scanning must slightly overlap the black mask portion.
After aging, readjust the camera as explained in this manual. (Some items only need to be checked.)

(2) **Warming up the camera**
Turn on the camera at least 10 minitues before making any adjustments.

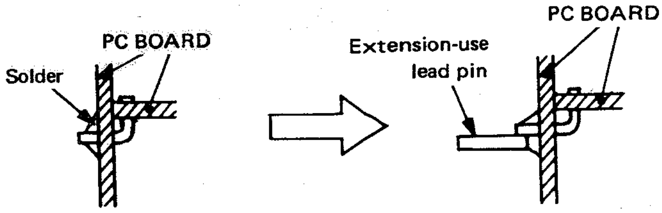
(3) **Lighting**
- Adjust the distance between the light and the subject so that the illumination on the subject is about 2,500 lux.
- Make the illumination over the entire subject surface as uniform as possible.

(4) Connection to external trigger terminals of oscilloscope
The following trigger signals must be monitored separately:
- **Horizontal trigger signal**
  Q3 (blue wire) or Q4 (red wire) connector of the DEF & HV BOARD.
- **Vertical trigger signal**
  Q1 (orange wire) or Q2 (yellow wire) connector of the DEF & HV BOARD.

(5) **Caution "High Voltage"**
Some parts of this camera, carry high voltages, such as the high voltage transformer, high voltage module and EVF, exercise extreme care during adjustment.

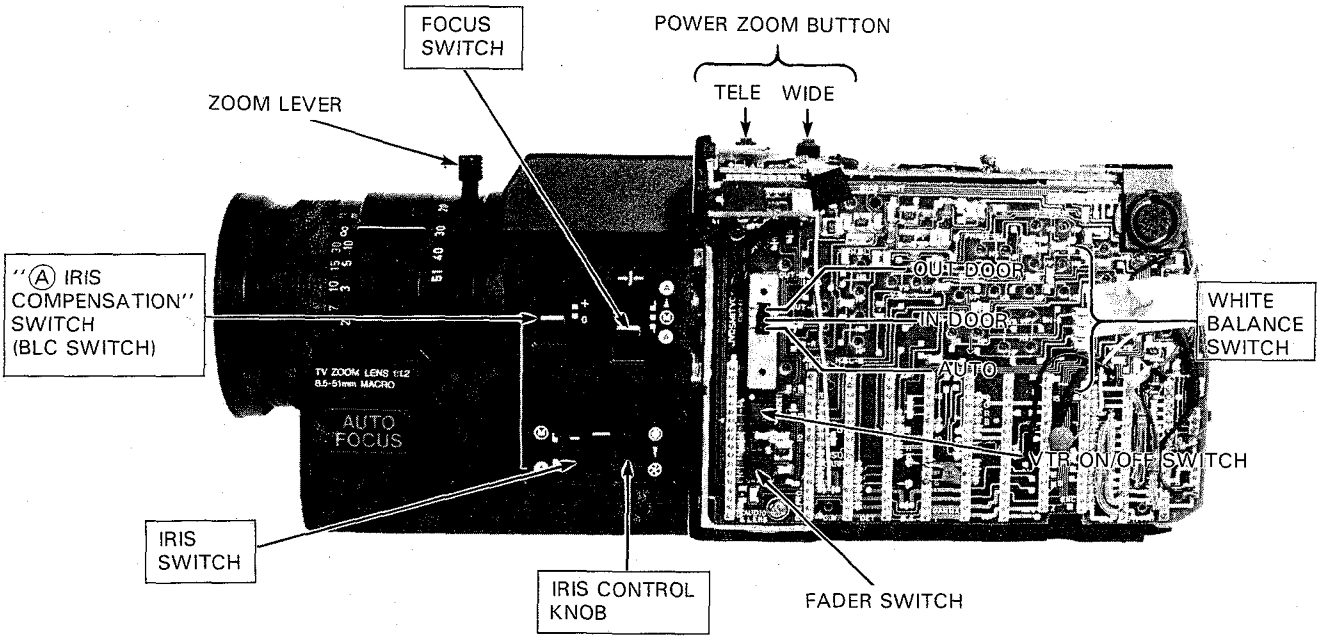
(6) **Test points**
The pins of respective PC BOARD modules of this camera are used as the test points, making it very difficult to connect onto these pins. it is therefore recommended that axtension-use lead pins be attached to those pins frequently used.

* (B7) (B8) (F12) (F13) (F14) (J5) (J6) and others

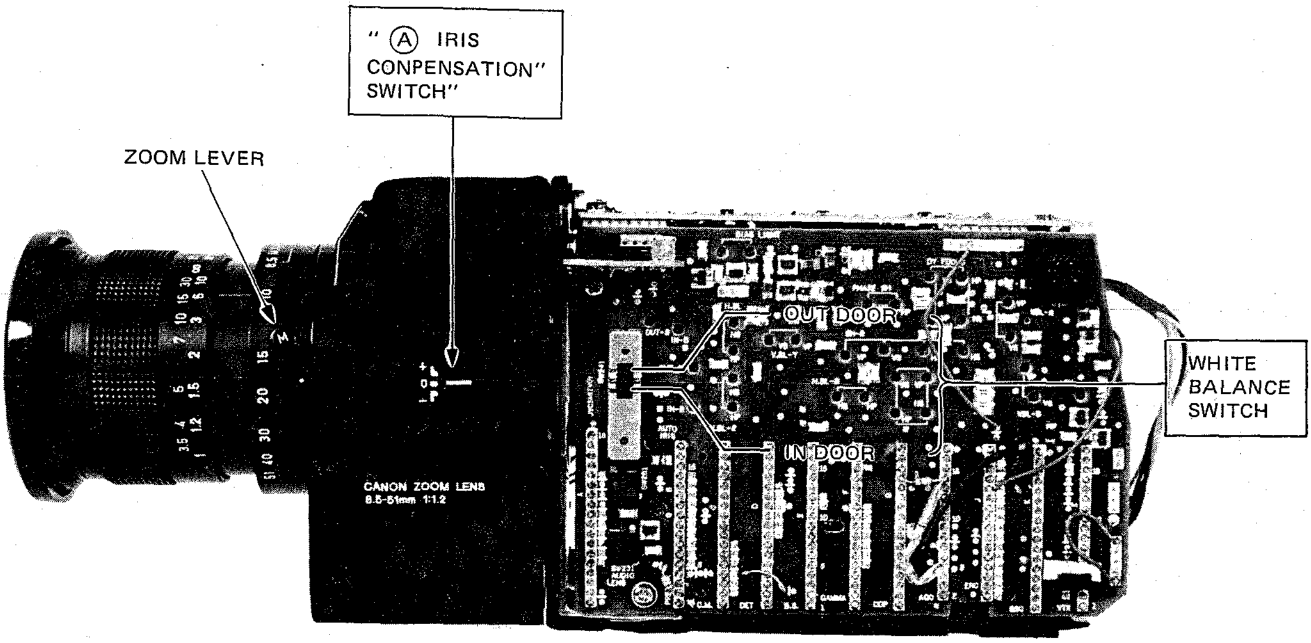

PC BOARD
Solder
Extension-use lead pin
PC BOARD

MAIN PARTS ARRANGEMENT CHART

*** GX-N7U/UT**


FOCUS SWITCH
POWER ZOOM BUTTON
TELE
WIDE
ZOOM LEVER
"Ⓐ IRIS COMPENSATION" SWITCH (BLC SWITCH)
OUT-DOOR
IN-DOOR
AUTO
WHITE BALANCE SWITCH
TV ZOOM LENS 1:1.2 8.5-51mm MACRO
AUTO FOCUS
VTR ON/OFF SWITCH
IRIS SWITCH
IRIS CONTROL KNOB
FADER SWITCH

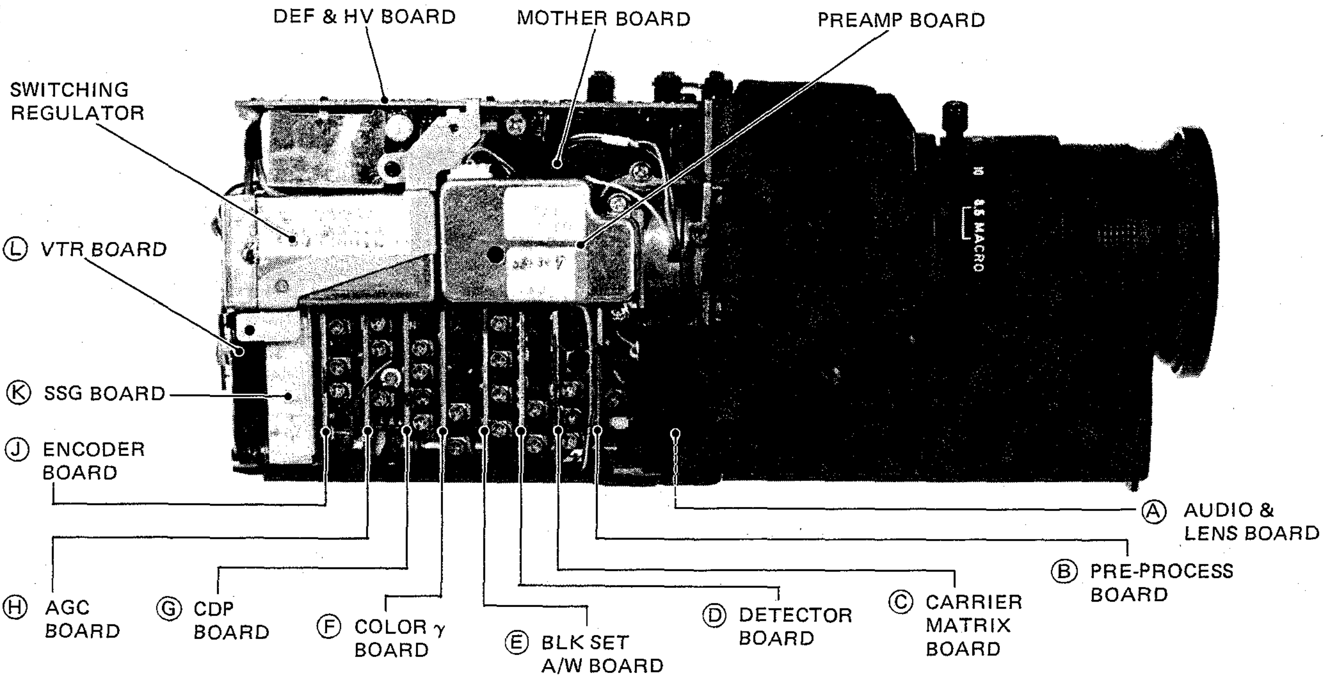
*** GX-N4U/UT**


" Ⓐ IRIS CONPENSATION" SWITCH"
ZOOM LEVER
OUT DOOR
IN DOOR
WHITE BALANCE SWITCH
CANON ZOOM LENS 8.5-51mm 1:1.2

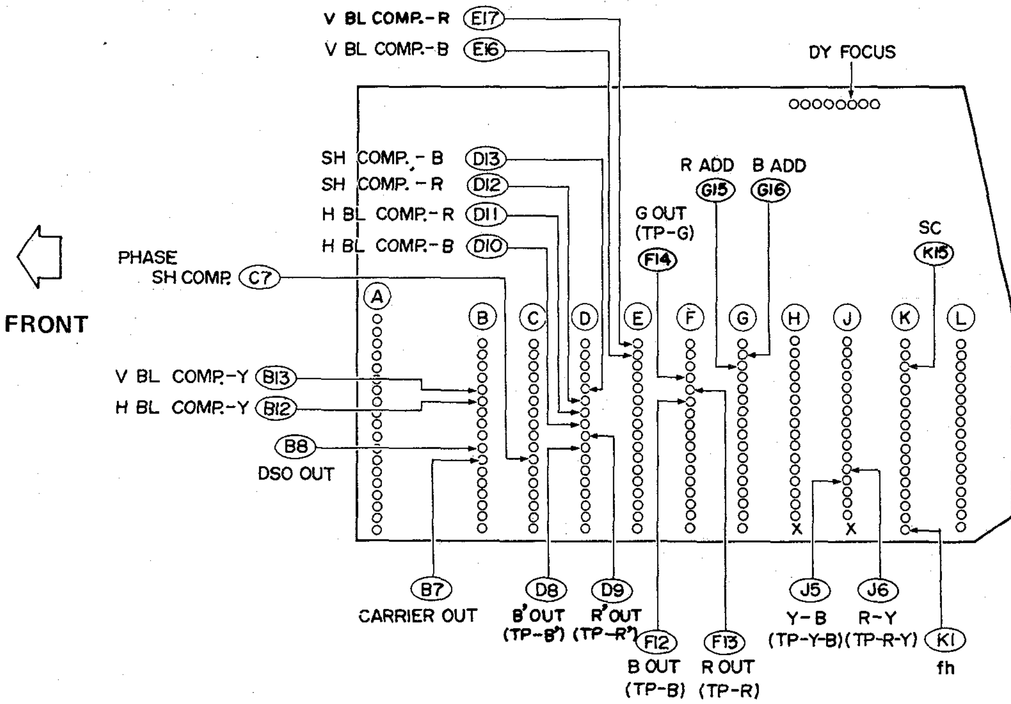
*On GX-N4U/UT, the functions of "VTR ON/OFF," "FADER," and "ELECTRIC ZOOM" are not provided. Also, the iris setting is made only to AUTO IRIS.

LOCATIONS OF BOARDS AND TESTPOINTS

○ BOARDS LOCATIONS

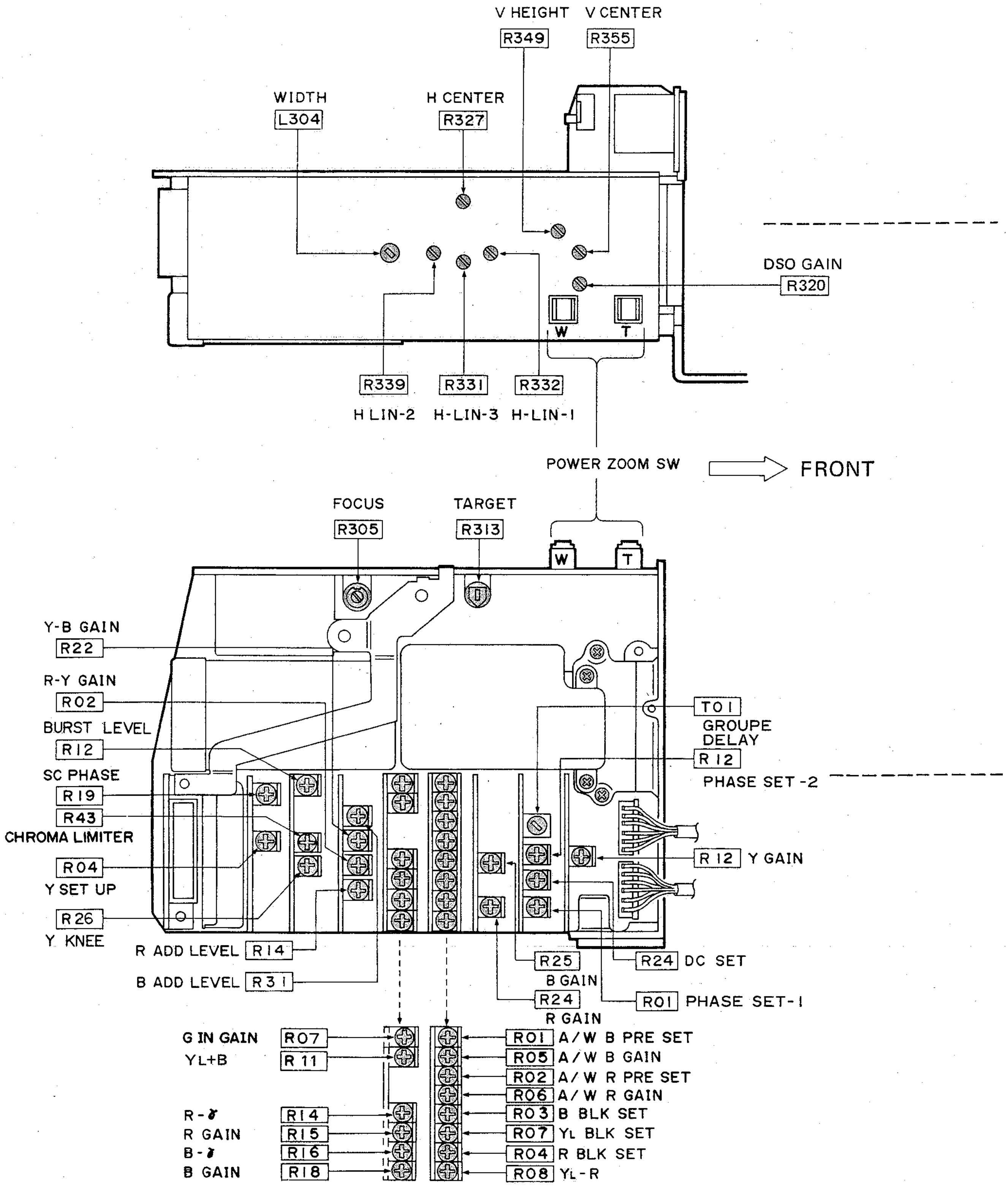

DEF & HV BOARD
MOTHER BOARD
PREAMP BOARD
SWITCHING REGULATOR
Ⓛ VTR BOARD
Ⓚ SSG BOARD
Ⓙ ENCODER BOARD
Ⓐ AUDIO & LENS BOARD
Ⓑ PRE-PROCESS BOARD
Ⓗ AGC BOARD
Ⓖ CDP BOARD
Ⓕ COLOR γ BOARD
Ⓔ BLK SET A/W BOARD
Ⓓ DETECTOR BOARD
Ⓒ CARRIER MATRIX BOARD

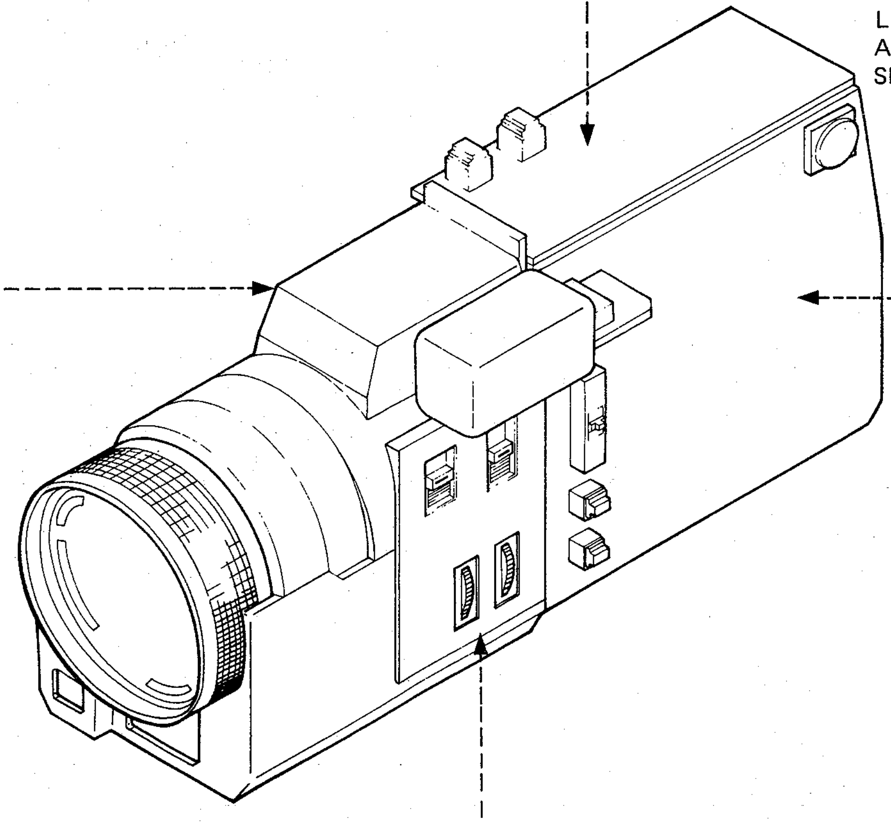
○ TEST POINTS LOCATIONS


V BL COMP.-R E17
V BL COMP.-B E16
DY FOCUS
SH COMP. - B D13
SH COMP. - R D12
H BL COMP.- R D11
H BL COMP.- B D10
R ADD G15
B ADD G16
G OUT (TP-G) F14
SC K15
PHASE SH COMP. C7
FRONT
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓙ Ⓚ Ⓛ
V BL COMP.-Y B13
H BL COMP.-Y B12
B8 DSO OUT
B7 CARRIER OUT
D8 B' OUT (TP-B')
D9 R' OUT (TP-R')
F12 B OUT (TP-B)
F13 R OUT (TP-R)
J5 Y-B (TP-Y-B)
J6 R-Y (TP-R-Y)
K1 fh
X
X

Ⓐ : AUDIO & LENS BOARD
Ⓑ : PRE-PROCESS BOARD
Ⓒ : CARRIER MATRIX BOARD
Ⓓ : DETECTOR BOARD
Ⓔ : BLACK SET BOARD
Ⓕ : COLOR γ BOARD
Ⓖ : CDP BOARD
Ⓗ : AGC BOARD
Ⓙ : ENCODER BOARD
Ⓚ : SSG BOARD
Ⓛ : VTR TRIGGER, RUN & BATTERY ALARM BOARD

ADJUSTMENT LOCATIONS


V HEIGHT
R349
V CENTER
R355
WIDTH
L304
H CENTER
R327
DSO GAIN
R320
W
T
R339
H LIN-2
R331
H-LIN-3
R332
H-LIN-1
POWER ZOOM SW
FRONT
FOCUS
R305
TARGET
R313
W
T
Y-B GAIN
R22
R-Y GAIN
R02
BURST LEVEL
R12
SC PHASE
R19
R43
CHROMA LIMITER
R04
Y SET UP
R26
Y KNEE
R ADD LEVEL
R14
B ADD LEVEL
R31
T01
GROUPE DELAY
R12
PHASE SET-2
R12
Y GAIN
R25
B GAIN
R24
DC SET
R24
R GAIN
R01
PHASE SET-1
G IN GAIN
R07
YL+B
R 11
R-γ
R14
R GAIN
R15
B-γ
R16
B GAIN
R18
R01
A/W B PRE SET
R05
A/W B GAIN
R02
A/W R PRE SET
R06
A/W R GAIN
R03
B BLK SET
R07
YL BLK SET
R04
R BLK SET
R08
YL-R

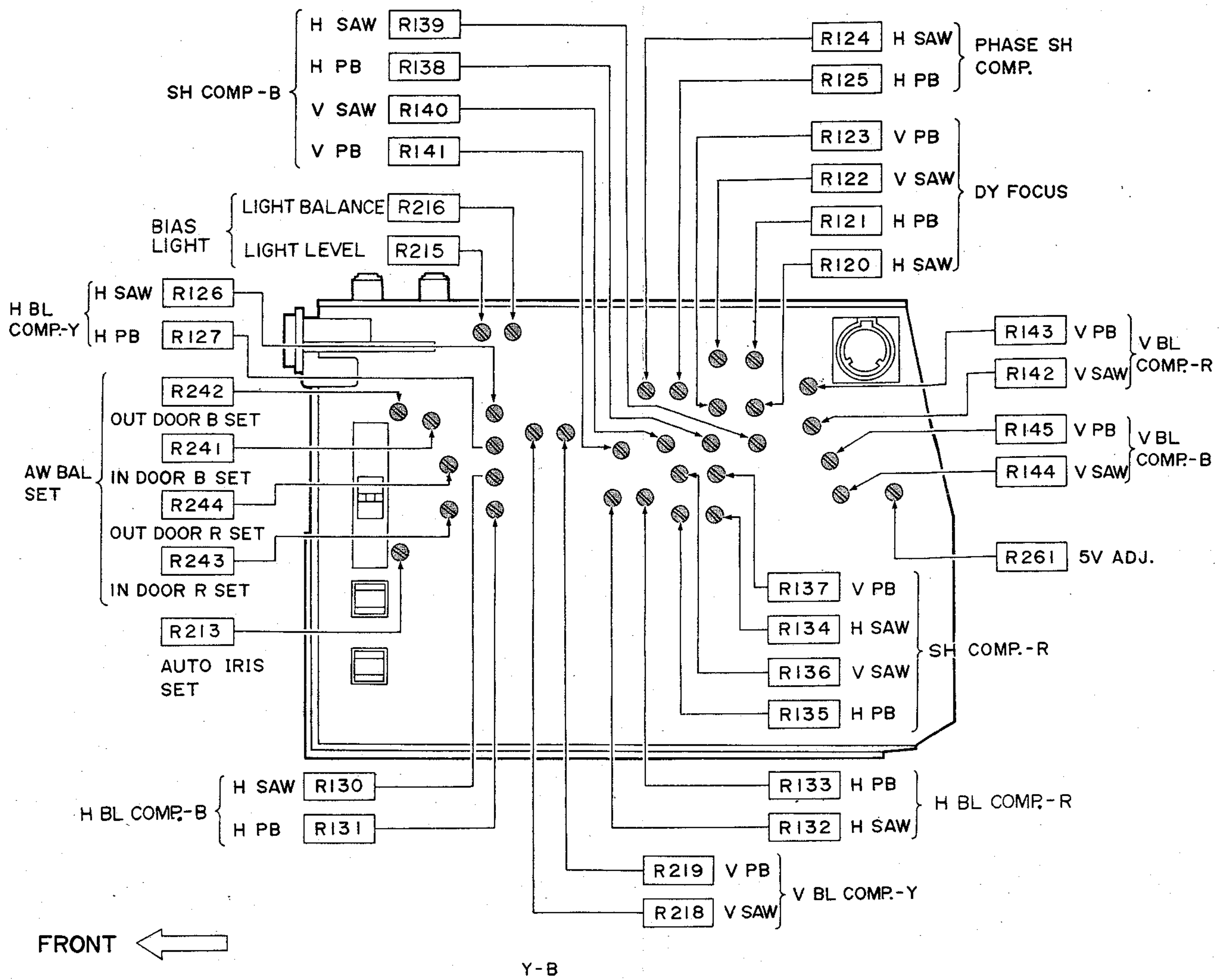


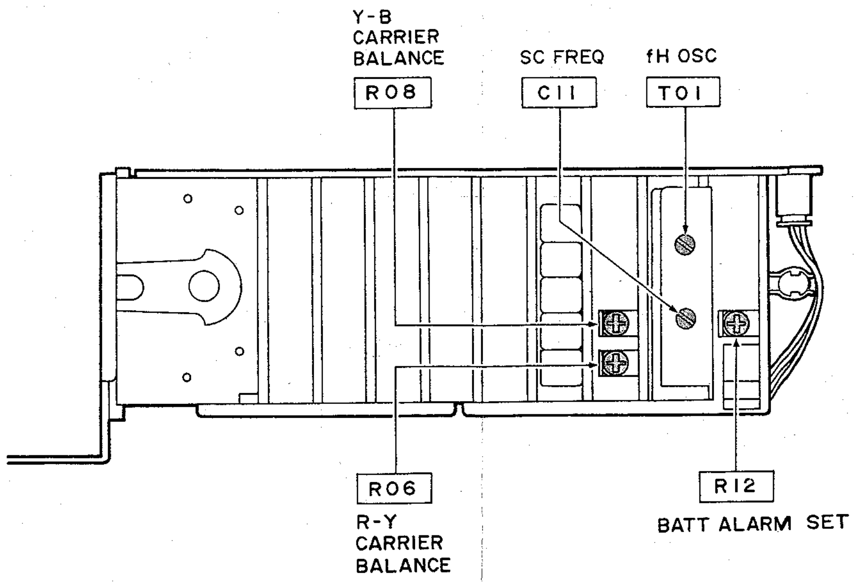
ADJUSTMENT OF THE DEFRECTION SYSTEM

ADJUSTMENT OF THE SHADING COMP., BIAS LIGHT COMP., IRIS SET AND WHITE BALANCE SET

ADJUSTMENT OF THE SIGNAL SYSTEM AND FOCUS

ADJUSTMENT OF THE SSG, CARRIER BALANCE AND BATTERY ALARM


SH COMP-B
H SAW R139
H PB R138
V SAW R140
V PB R141
R124 H SAW
R125 H PB
PHASE SH COMP.
R123 V PB
R122 V SAW
R121 H PB
R120 H SAW
DY FOCUS
BIAS LIGHT
LIGHT BALANCE R216
LIGHT LEVEL R215
H BL COMP.-Y
H SAW R126
H PB R127
R143 V PB
R142 V SAW
V BL COMP.-R
R145 V PB
R144 V SAW
V BL COMP.-B
AW BAL SET
R242
OUT DOOR B SET
R241
IN DOOR B SET
R244
OUT DOOR R SET
R243
IN DOOR R SET
R261 5V ADJ.
R213
AUTO IRIS SET
R137 V PB
R134 H SAW
R136 V SAW
R135 H PB
SH COMP.-R
H BL COMP.-B
H SAW R130
H PB R131
R133 H PB
R132 H SAW
H BL COMP.-R
R219 V PB
R218 V SAW
V BL COMP.-Y
FRONT


Y-B CARRIER BALANCE
R08
SC FREQ
C11
fH OSC
T01
R06
R-Y CARRIER BALANCE
R12
BATT ALARM SET

ADJUSTMENT PROCEDURES

1. These adjustment procedures are applicable to both **GX-N7U/UT** and **GX-N4U/UT**. However, since slight differences exist on the iris setting or others, conduct adjustments by confirming each time the correct adjusting procedures.

• PRESETTING FOR GX-N7U/UT

Before starting the adjustment procedure, preset the following switches as indicated.

1) Iris switch → " Ⓜ " **(Manual)**
2) " A iris compensation" switch → **"0"**
3) White balance button → " 💡 " **(In-door)**
4) Focus switch → **"MANUAL"**

(Note) The AGC turns OFF when IRIS SWITCH is set to MANUAL, and ON when the switch is set to AUTO.

• PRESETTING FOR GX-N4U/UT

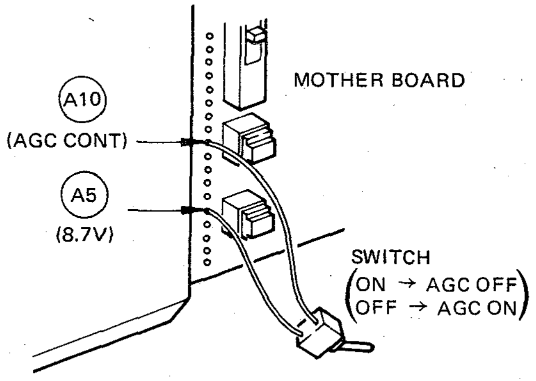
Before starting the adjustment procedure, preset the following switches as indicated.

1) " A iris compensation" switch → **"0"**
2) White balance button → " 💡 " **(In-door)**

On **GX-N4U/UT**, only the AUTO IRIS is provided. Regarding the adjustment procedure where this item appears with instruction reading "set the IRIS CONTROL SWITCH TO AUTO," no adjusting step is required.

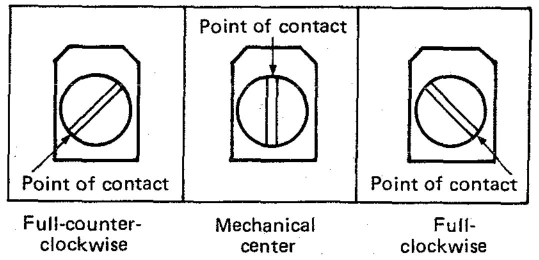
(Note) When turning the AGC OFF on **GX-N4U/UT**, conduct the following procedures.

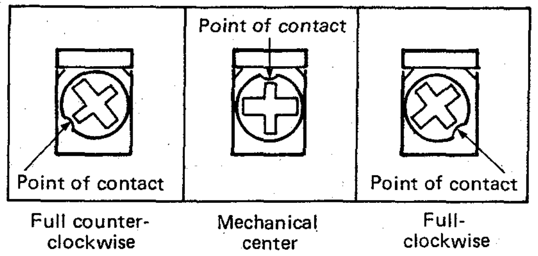
1. As shown in the figure, install the switch by connecting a wire to Ⓐ10 (AGC CONT.) and Ⓐ5 (8.7V).
2. When the switch is turned ON, the AGC turns OFF; when the switch is turned OFF, the AGC turns ON. After completing the wire connection, confirm that the switch/AGC relation ship exists.


A10
(AGC CONT)
A5
(8.7V)
MOTHER BOARD
SWITCH
(ON → AGC OFF
OFF → AGC ON)

2. Very thin wires are used for wiring connection between multiple circuit boards. Removing and replacing the circuit boards several times during adjustment may cause the connections to be broken.
3. Use the **Ground** on the PC board module. Grounding to the chassis frame is liable to cause distortion of the waveform.
4. **Repeat adjusting procedures** until the best condition is attained.

(Note) 1. Chip VR rotating position is designated as shown in the figure below for the convenience of explanation, since the chip VR can be rotated 360°


Point of contact
Point of contact
Point of contact
Full-counter-clockwise
Mechanical center
Full-clockwise

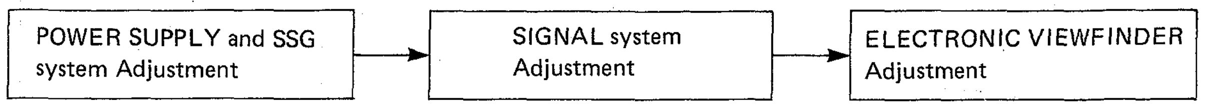

Point of contact
Point of contact
Point of contact
Full counter-clockwise
Mechanical center
Full-clockwise

2. Never rotate VR's other than those specified by this Instruction Manual.

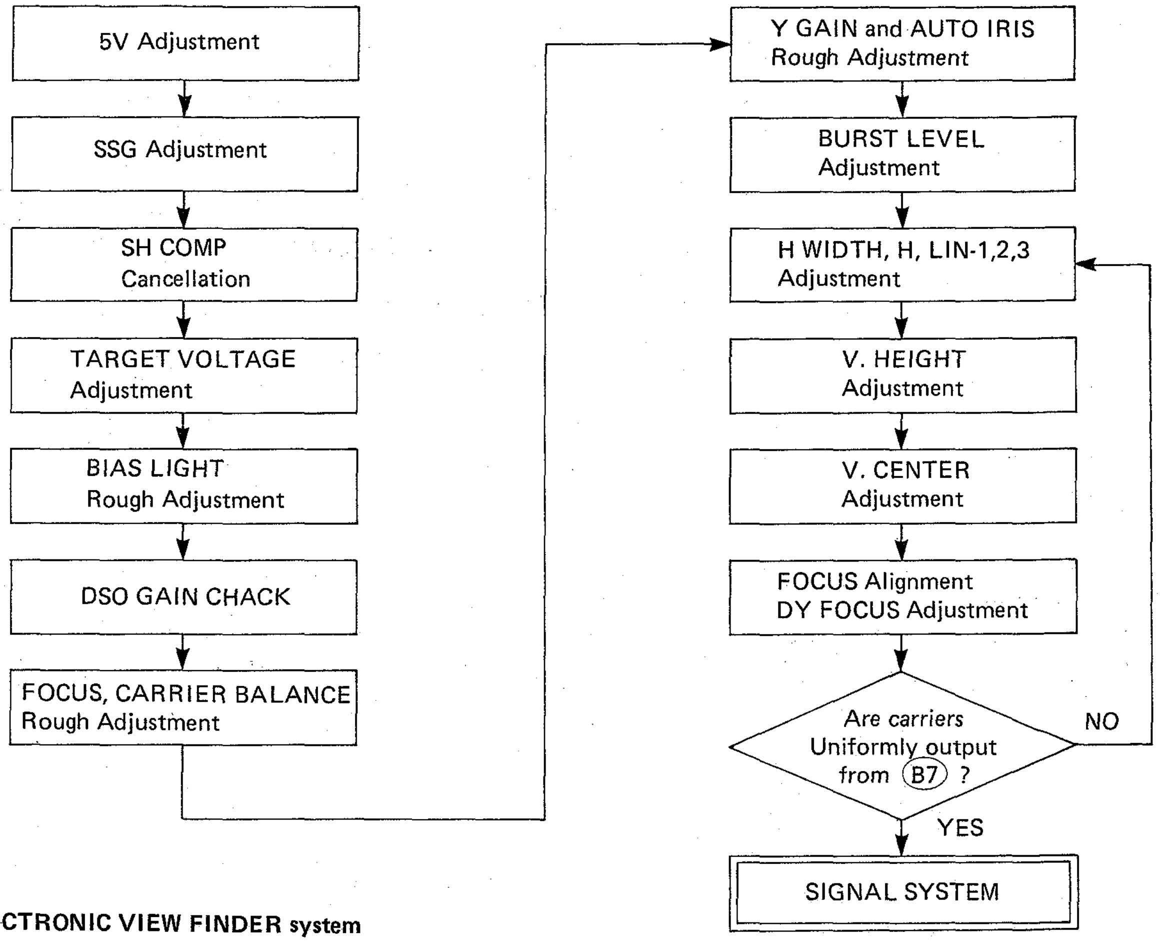
5. Unless otherwise designated, always apply **"just scan"** to all pattern adjustments.

ADJUSTING STEP

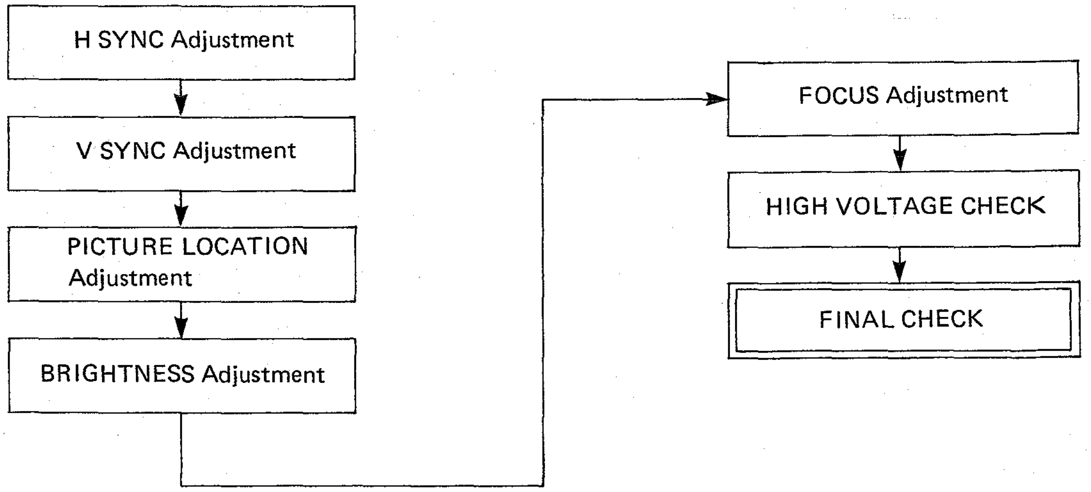
- **ADJUSTING STEP**


POWER SUPPLY and SSG system Adjustment
SIGNAL system Adjustment
ELECTRONIC VIEWFINDER Adjustment

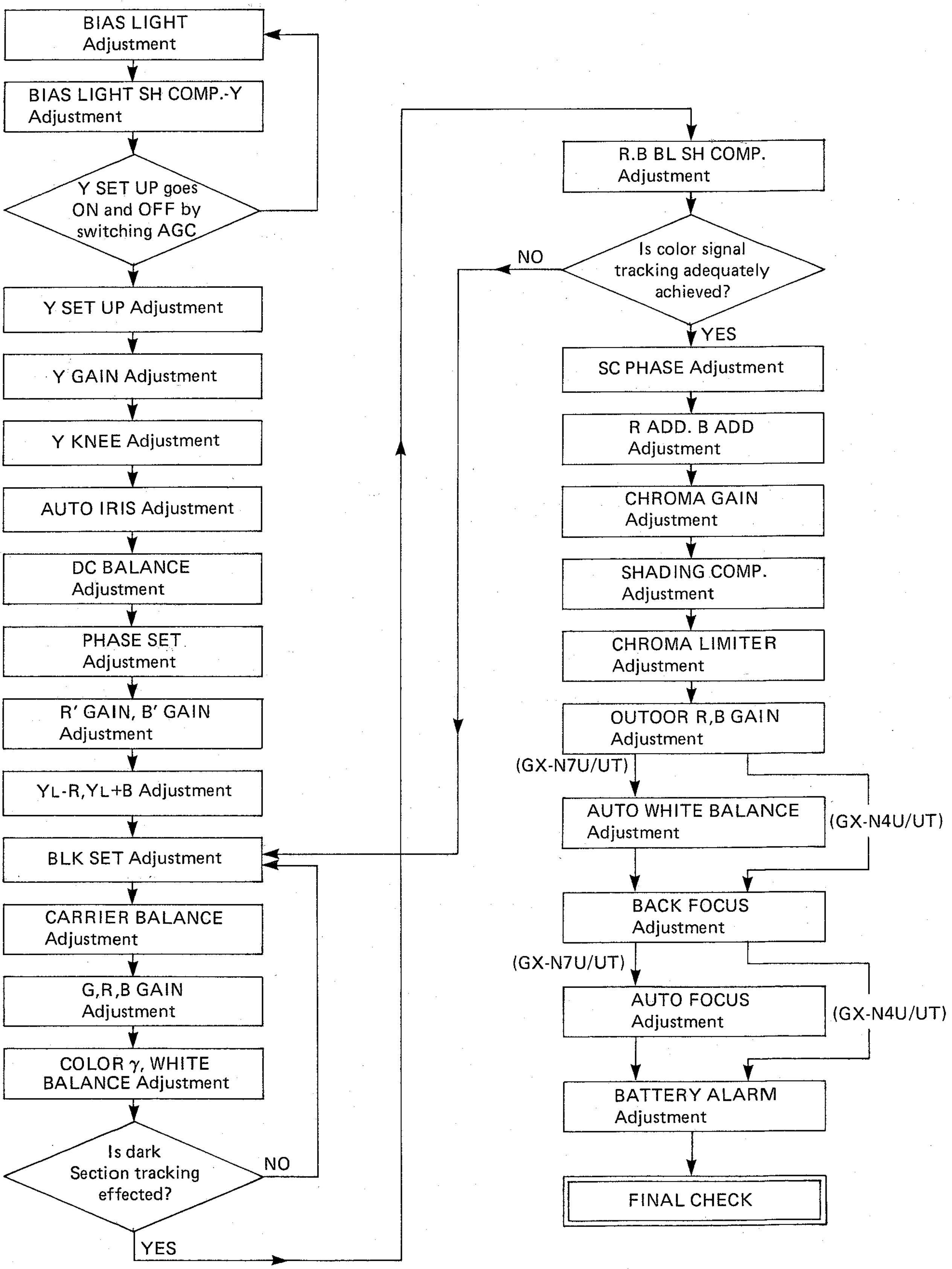
1. POWER SUPPLY and SSG system


5V Adjustment
SSG Adjustment
SH COMP Cancellation
TARGET VOLTAGE Adjustment
BIAS LIGHT Rough Adjustment
DSO GAIN CHACK
FOCUS, CARRIER BALANCE Rough Adjustment
Y GAIN and AUTO IRIS Rough Adjustment
BURST LEVEL Adjustment
H WIDTH, H, LIN-1,2,3 Adjustment
V. HEIGHT Adjustment
V. CENTER Adjustment
FOCUS Alignment
DY FOCUS Adjustment
Are carriers Uniformly output from B7 ?
NO
YES
SIGNAL SYSTEM

3. ELECTRONIC VIEW FINDER system

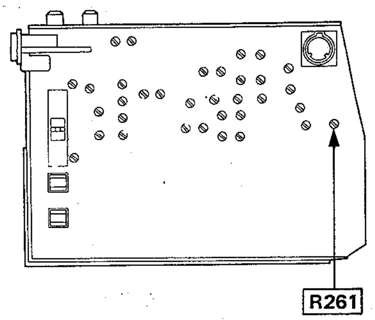
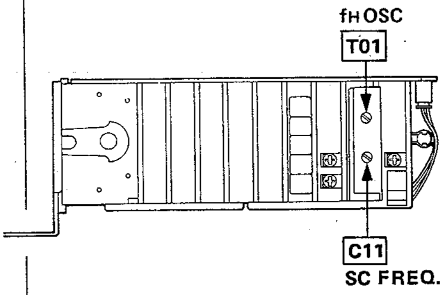

H SYNC Adjustment
V SYNC Adjustment
PICTURE LOCATION Adjustment
BRIGHTNESS Adjustment
FOCUS Adjustment
HIGH VOLTAGE CHECK
FINAL CHECK

2. SIGNAL system


BIAS LIGHT Adjustment
BIAS LIGHT SH COMP.-Y Adjustment
Y SET UP goes ON and OFF by switching AGC
Y SET UP Adjustment
Y GAIN Adjustment
Y KNEE Adjustment
AUTO IRIS Adjustment
DC BALANCE Adjustment
PHASE SET Adjustment
R′ GAIN, B′ GAIN Adjustment
YL-R,YL+B Adjustment
BLK SET Adjustment
CARRIER BALANCE Adjustment
G,R,B GAIN Adjustment
COLOR γ, WHITE BALANCE Adjustment
Is dark Section tracking effected?
NO
YES
R.B BL SH COMP. Adjustment
Is color signal tracking adequately achieved?
NO
YES
SC PHASE Adjustment
R ADD. B ADD Adjustment
CHROMA GAIN Adjustment
SHADING COMP. Adjustment
CHROMA LIMITER Adjustment
OUTOOR R,B GAIN Adjustment
(GX-N7U/UT)
AUTO WHITE BALANCE Adjustment
(GX-N4U/UT)
BACK FOCUS Adjustment
(GX-N7U/UT)
AUTO FOCUS Adjustment
(GX-N4U/UT)
BATTERY ALARM Adjustment
FINAL CHECK

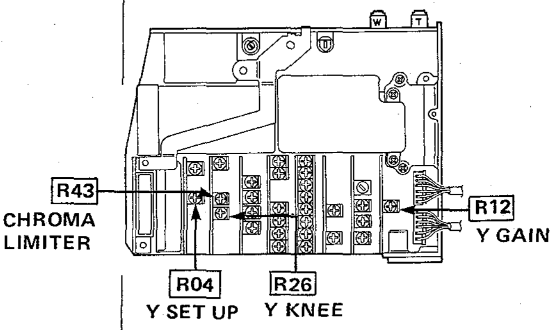
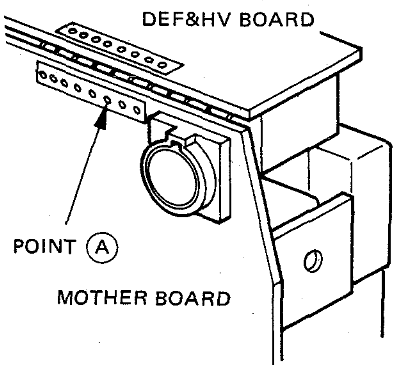
No.	Item	Measuring instrument	Test point and Adjustment part	Description

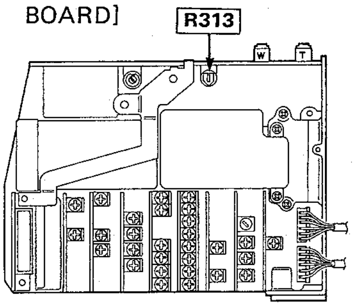
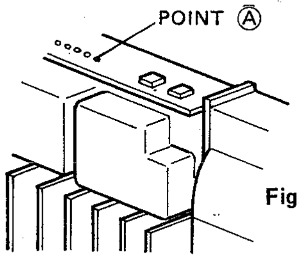
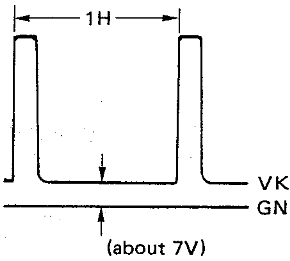
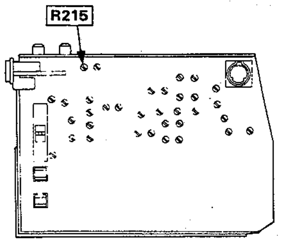
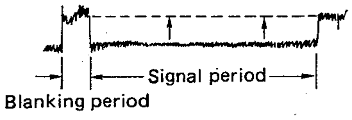
1. ADJUSTING THE POWER SUPPLY AND SSG

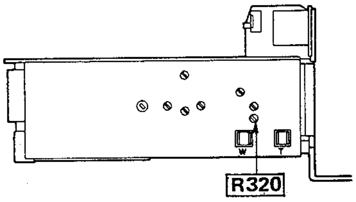
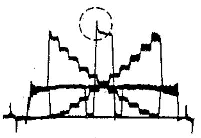
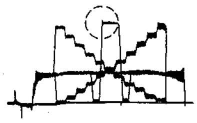
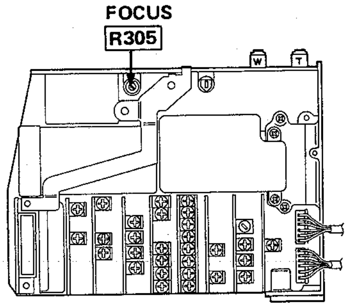
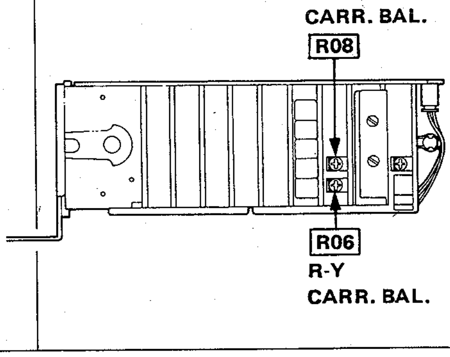
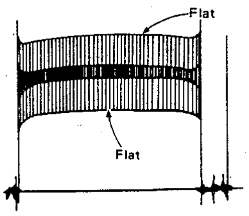
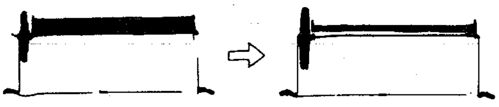
1.	**5V Adjustment**	**DC Voltmeter**	**(B2) (5V LINE)** [PRE-PRO BOARD] **R261(5V ADJ.)** [MOTHER BOARD] 	Set the DC voltage to **5.0 V ± 0.05 V** scale of the meter **(Note)** The voltmeter should be precisely adjusted. Ensure that only an accurate tester is used.
2.	**SSG Adjustment**	This adjustment is only done when repairing the SSG IC and peripherals that require adjustment. In most cases, you can go directly to step 2 **"Adjusting the Deflection System".**		
(A)	**fsc Adjustment**	**Frequency counter**	**(K15)** [SSG BOARD] **C11(SC FREQ.)** [SSG BOARD]	Turn the **C11 (SC FREQ.)** trimmer to obtain a frequency counter reading of **3.579545 MHz ± 5 Hz.** **(Note)** Take care not to short-circuit any of the IC terminals.
(B)	**fh Adjustment**	**DC Voltmeter**	**(K1)** [SSG BOARD] **T01 (fh OSC)** [SSG BOARD] 	Turn the core of the **T441 (fh OSC)** to obtain a DC voltmeter reading of **2.5 V ± 0.5 V.**

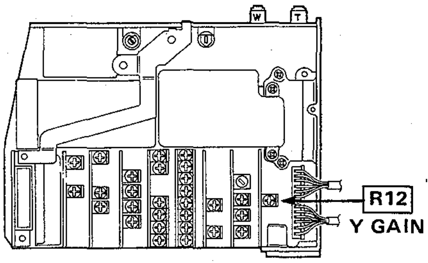
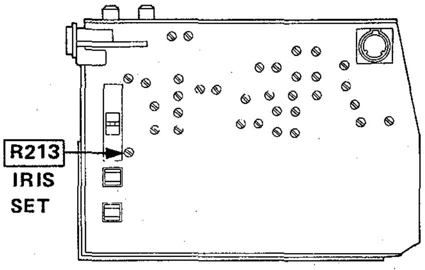
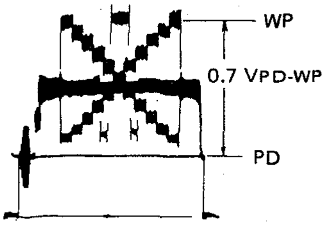
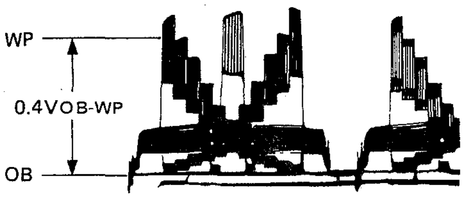
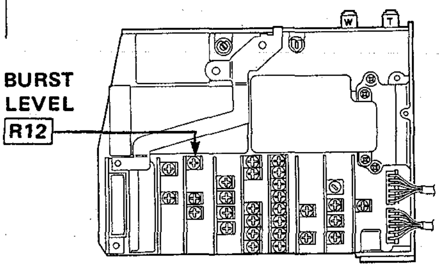
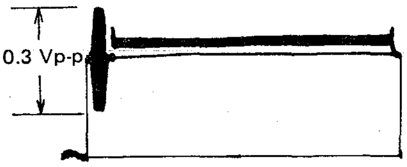
No.	Item	Measuring instrument	Test point and Adjustment part	Description

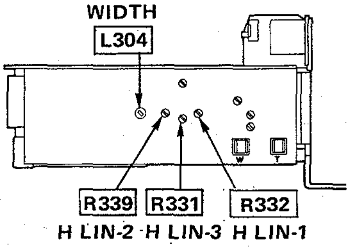
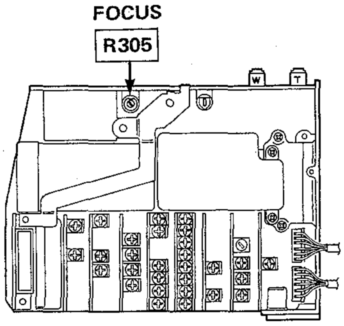
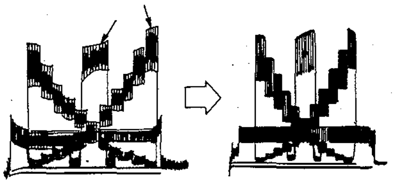
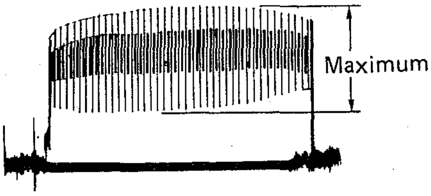
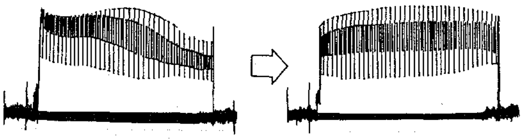
2. ADJUSTING THE DEFLECTION SYSTEM

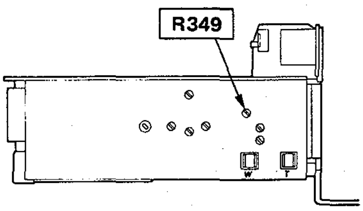
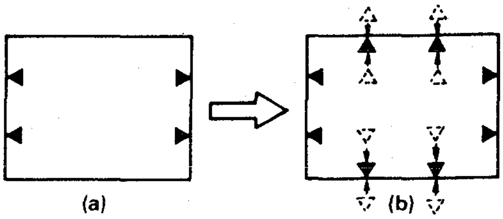
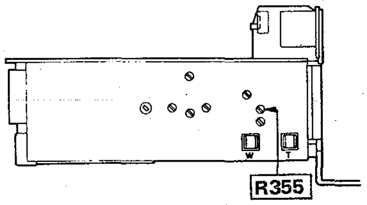
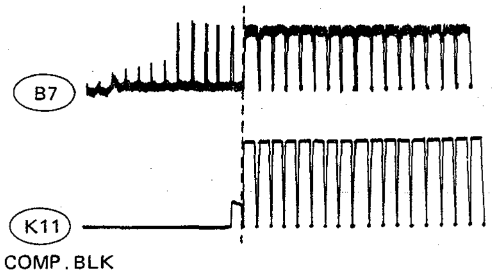
PRESETTING				
A	To obtain a picture		 R43 CHROMA LIMITER R12 Y GAIN R04 Y SET UP R26 Y KNEE	If a picture is not obtained, preset the following VRs as indicated. ● **PRE PROCESS BOARD** **R12 (Y GAIN) → Mechanical center.** ● **AGC BOARD** **R26 (Y KNEE)** **→ Turn fully counter clockwise.** **R43 (CHROMA LIMITER)** **→ Mechanical center.** ● **ENCODER BOARD** **R04 (Y SET UP) → Mechanical center.** If a picture is already obtained or fine adjustment is to be made later, presetting is not necessary.
B	SH COMP. Cancellation		(B12) (B13) **H BL COMP-Y VRs** [PRE PRE BOARD] **V BL COMP-Y VRs** (C7) **PHASE SH COMPVRs** [CM BOARD] (D10) (D11) **H BL COMP-R VRs** (D12) (D13) **H BL COMP-B VRs** **SH COMP-R VRs** [DET BOARD] **SH COMP-B VRs** (E16) (E17) **V BL COMP-B VRs** [B. SET BOARD] **V BL COMP-R VRs** **POINT Ⓐ** **DY.FOCUS VRs** [MOTHER* BOARD] [MOTHER BOARD]  *As to the each VR position, refer to the item "ADJUSTMENT LOCATIONS".	Before performing deflection adjustments, preset the following VRs as indicated. 1. Measure (B12) at the H-rate and adjust the **H BL COMP-Y VR** to obtain flat waveforms. 2. Measure (B13) at the V-rate and adjust the **V BL COMP-Y VR** to obtain flat waveforms. 3. Measure (C7) at the H-rate and adjust the **PHASE SH COMP VR** to obtain flat waveforms. 4. Measure (D11) at the H-rate and adjust the **H BL COMP-R VR** to obtain flat waveforms. 5. Measure (D10) at the H-rate and adjust the **H BL COMP-B VR** to obtain flat waveforms. 6. Measure (D12) at the H- and V-rate, and adjust the **SH COMP-R VR** to obtain flat waveforms. 7. Measure (D13) at the H- and V-rate, and adjust the **SH COMP-B VR** to obtain flat waveforms. 8. Measure (E16) at the V-rate and adjust the **V BL COMP-B VR** to obtain flat waveforms. 9. Measure (E17) at the V-rate and adjust the **V BL COMP-R VR** to obtain flat waveforms. 10. Measure **POINT Ⓐ** at the H- and V-rate, and adjust the **DY FOCUS VR** to obtain flat waveforms.

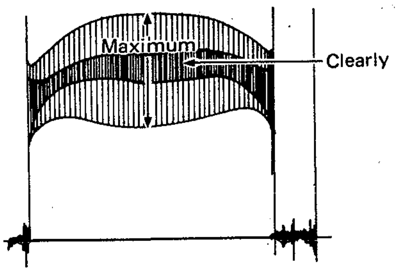
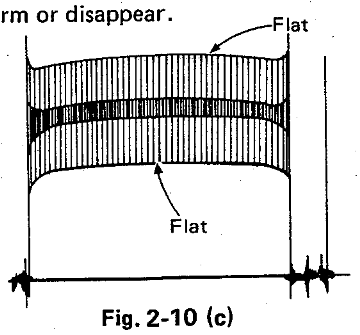
No.	Item	Measuring instrument	Test point and Adjustment part	Description
1.	**TARGET VOLTAGE SETTING**	**Oscilloscope** **(H-rate 10:1)**	**B14** [PRE-PRO BOARD] **R313 (TARGET)** [DEF & HV BOARD]   **Fig. 2-1 (a)**	1. **Confirm the display** voltage appearing on the pickup tube. (Confirmation is facilitated by demounting a switching regulator.) 2. Observe Point Ⓐ shown in **Fig. 2-1 (a)** and measure cathode voltage (Vk). (Waveforms shown in **Fig. 2-1 (b)** are observable.)  **Fig. 2-1 (b)** 3. Measure **B14** and adjust **R313 (TARGET)** so that voltage becomes "pickup tube display voltage + cathode voltage (Vk)."
2.	**Rough Adjustment of the BIAS LIGHT**	**Oscilloscope** **(H-rate 1:1)**	**B8** [PRE-PRO BOARD] **R215 (LIGHT LEVEL)** [MOTHER BOARD] 	○ **Close the Iris** 1. As shown in **Fig. 2-2**, adjust **R215 (LIGHT LEVEL)** so that the signal-period level matches the blanking-period level.  **Fig. 2-2**

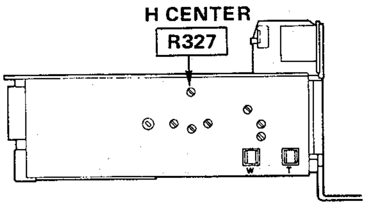
No.	Item	Measuring instrument	Test point and Adjustment part	Description
3.	DSO GAIN CHECK	Oscilloscope H-rate 10:1 Gray scale pattern	(F14) (TP-G) [GAMMA BOARD] **R320 (DSO GAIN)** [DEF & HV BOARD] 	o **Set the IRIS CONTROL SWITCH to AUTO** 1. While obeserving (F14) , set **R320 (DSO GAIN)** immediately before waveform overshooting illustated in **Fig. 2-3 (a)** appears as shown in **Fig. 2-3 (b)**.  **Fig. 2-3 (a)** Set immediately before waveform overshooting appears.  **Fig. 2-3 (b)**
4.	Rough Adjustment of the FOCUS and CARRIER BALANCE	Oscilloscope H-rate 10:1 White pattern	(B7) [PRE-PRE BOARD) **R305 (FOCUS)** (DEF & HV BOARD) **VIDEO OUT** **R08 (Y-B CARR. BAL.)** **R06 (R-Y CARR. BAL.)** [AGC BOARD]  	o **Set the IRIS SWITCH to AUTO** 1. Measure (B7) and adjust **R305 (FOCUS)** so that the waveforms are maximized and phase lines become cearly observable, as shown in **Fig. 2-4 (a).**  **Fig. 2-4 (a)** o **Close the Iris (AGC OFF)** 2. Measure VIDEO OUT, and alternately adjust **R08 (Y-B CARR. BAL.)** and **R06 (R-Y CARR. BAL.)** so that the carriers are minimized as shown in **Fig. 2-4 (b).**  **Fig. 2-4 (b)** **(Note)** When the adjustment of the CARRIER BALANCE is difficult to understand, preset **R03** and **R07** of the B SET BOARD completely to the right and **R04** completely to the left. When adjustment is complete, return **R03** and **R07** competely to the left and **R04** completely to the right.

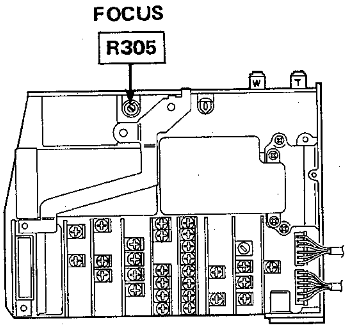
No.	Item	Measuring instrument	Test point and Adjustment part	Description
5.	**Rough Adjustment of the Y GAIN and AUTO IRIS**	**Oscilloscope (H-rate 10:1)** **Gray scale pattern**	**(B8)** [PRE-PRO BOARD] **R12 (Y GAIN)** [PRE-PRO BOARD] **R213 (IRIS SET)** [MOTHER BOARD]  	○ **Set the IRIS SWITCH to AUTO** 1. Measure **VIDEO OUT,** and as shown in **Fig. 2-5 (a),** adjust **R213 (IRIS SET)** so that the waveforms become **0.7VPD-WP** (pedestal-white peak)  **Fig. 2-5 (a)** 2. Measure **(B8)**, and as shown in **Fig. 2-5 (b),** adjust **R12 (Y GAIN)** so that the waveforms become **0.4VOB-WP** (optical black-white peak)  **Fig. 2-5 (b)**
6.	**BURST LEVEL Adjustment**	**Oscilloscope (H-rate 10:1)**	**VIDEO OUT** **R12 (BURST LEVEL)** [AGC BOARD] 	1. Adjust **R12 (BURST LEVEL),** so that the burst level is **0.3Vp-p** as shown in **Fig. 2-6.**  **Fig. 2-6** **(Note)** If the waveform is distorted, adjust **R43 (CHROMA LIMITER)** on the AGC Board to a position where there is no longer any distortion. Be sure that the normal color of the video images is not lost.

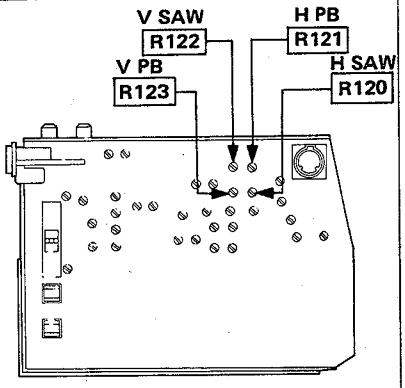
No.	Item	Measuring instrument	Test point and Adjustment part	Description
7.	H. WIDTH H. LIN Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern White pattern	(B7) (B8) [PRE-PRO BOARD] L304 (WIDTH) R332 (H LIN-1) R339 (H LIN-2) R331 (H LIN-3) R305 (FOCUS) [DEF & HV BOARD]  WIDTH L304 R339 R331 R332 H LIN-2 H LIN-3 H LIN-1 W T 	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure (B8) by projecting the gray scale pattern. 2. Adjust **L304 (WIDTH)** so that the waveform edges become clear as shown in **Fig. 2-7 (a)**.  **Fig. 2-7 (a)** 3. Measure (B7) by projecting the white pattern. 4. Adjust **R305 (FOCUS)** so that the carrier is maximized as shown in **Fig. 2-7 (b)**.  **Fig. 2-7 (b)** 5. Adjust **R332 (H LIN-1)**, **R339 (H LIN-2)**, and **R331 (H LIN-3)** so that the step line at the carrier center becomes **flat** as shown in **Fig. 2-7 (c)**.  **Fig. 2-7 (c)** 6. When required, repeat above **Steps 2 through 5.**

No.	Item	Measuring instrument	Test point and Adjustment part	Description
8.	**V. HEIGHT Adjustment**	**Monitor TV (underscan type)** **Gray scale pattern (GS-2A)**	**VIDEO OUT** **R349 (V HEIGHT)** [DEF & HV BOARD] 	○ If an overscanning-type monitor TV is used, mark the screen in the ratio 3:4. 1. Slide the camera back and forth or perform zooming until the horizontal frame marks concide with the side limits of the monitor screen, as shown in **Fig. 2-8 (a).** 2. Adjust **R349 (V. HEIGHT)** until the vertical frame marks concide with the upper and lower limits of the monitor screen, as shown in **Fig. 2-8(b).**  **Fig. 2-8**
9.	**V.CENTER Adjustment**	**Oscilloscope (V-rate 1 : 1)** **White pattern**	**(B7)** [PRE-PRO BOARD] **R355 (V CENTER)** [DEF & HV BOARD] **(K11) (COMP. BLK)** [SSG BOARD] 	○ Set the IRIS CONTROL SWITCH to AUTO 1. Shoot the white pattern on the full screen surface and adjust so that the pattern edges do not appear on the screen. 2. Simultaneously measure (K11) (COMP. BLK) and (B7), and adjust **R355 (V CENTER)** so that the video start coincides with **COMP. BLK** completing point as shown in **Fig. 2-9.**  **Fig. 2-9**

No.	Item	Measuring instrument	Test point and Adjustment part	Description
10.	**SHADING and H CENTER Adjustment**	**Oscilloscope (H-rate 10:1)** **White pattern**	(B7) [PRE-PRO BOARD] **Alignment magnet** **R305 (FOCUS)** **R327 (H CENTER)** [DEF & HV BOARD] **DY FOCUS VRs** **R120 (H SAW)** **R121 (H PB)** **R122 (V SAW)** **R123 (V PB)** [MOTHER BOARD]	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. As shown in **Fig. 2-10 (a)**, demount the switching regulator by removing the screw Ⓐ **(Note)** Leave the connector attached. 2. Measure (B7), and as shown in **Fig. 2-10(b)**, adjust the **alignment magnet** and **R305 (FOCUS)** so that the carrier is maximum and the phase lines are clearly observable.  **Fig. 2-10 (b)** 3. As shown in **Fig. 2-10 (c)**, adjust **R120 (H SAW), R121 (H PB), R122 (V SAW),** and **R123 (V PB)** so that the waveforms become uniform or disappear.  **Fig. 2-10 (c)** 4. Adjust **R327 (H CENTER)** so that right-side/left-side balance of the carrier shown in **Fig. 2-10(c)** is equalized. 5. Repeat above steps 2 and 3 until shading is minimized. Also, if necessary, repeat **"2-6. H WIDTH/H LIN Adjustment."**


H CENTER
R327
W
T


FOCUS
R305
W
T


V SAW
R122
H PB
R121
V PB
R123
H SAW
R120

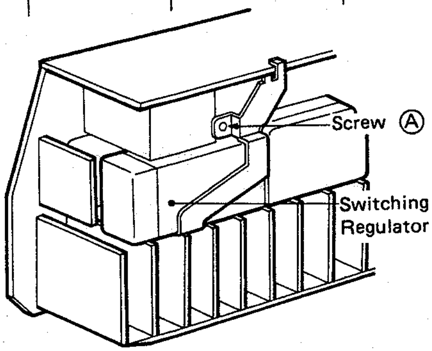

Screw Ⓐ
Switching Regulator

Fig. 2-10 (a)

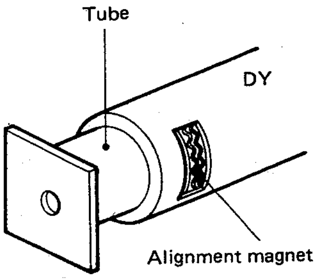
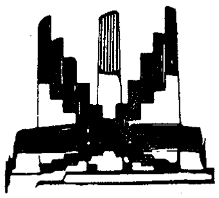
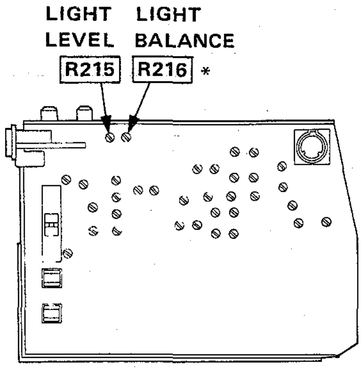
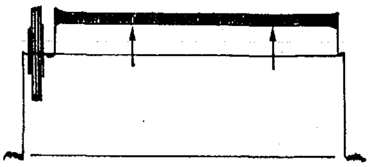

Tube
DY
Alignment magnet

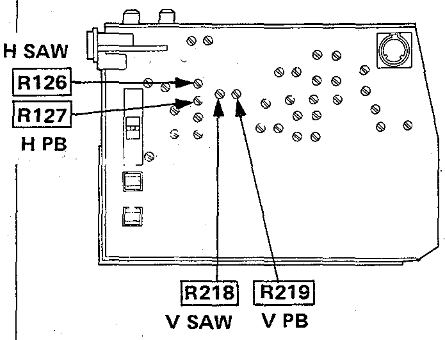
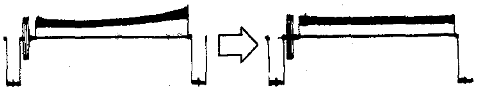
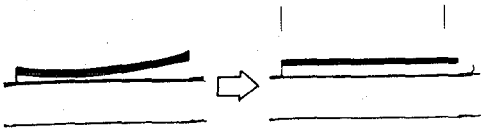
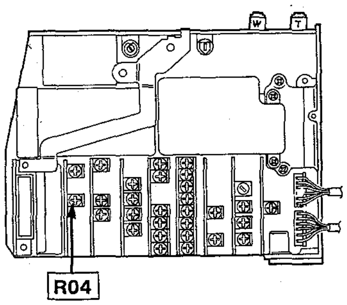
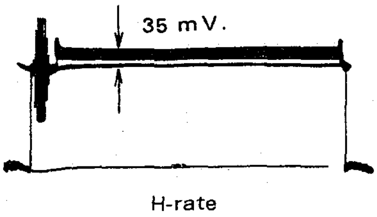
Fig. 2-10 (d)

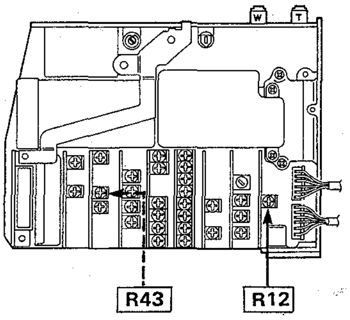
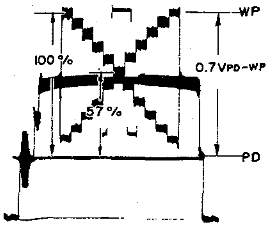
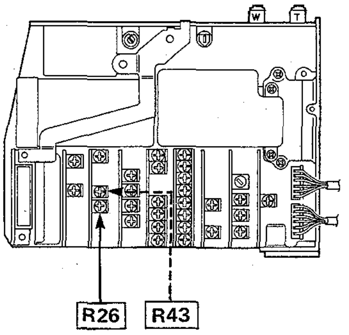
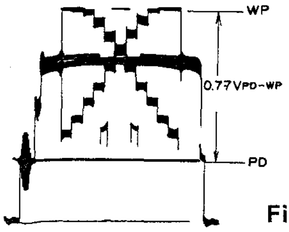
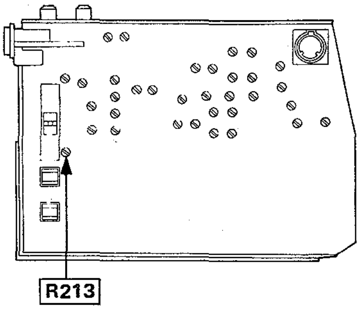
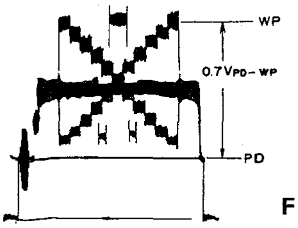
No.	Item	Measuring instrument	Test point and Adjustment part	Description

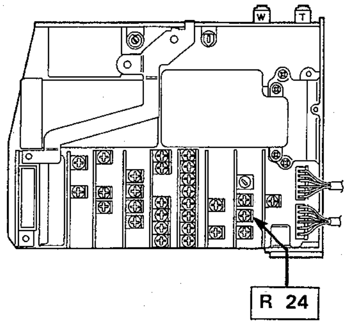
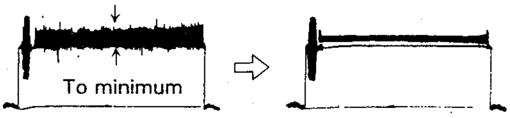
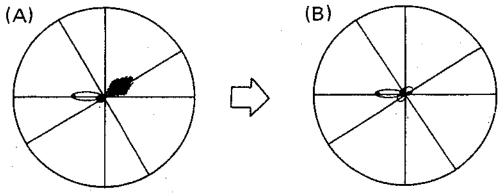
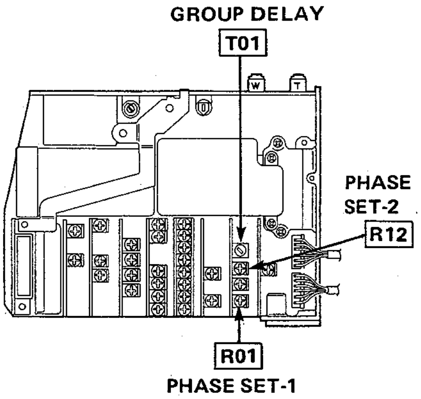
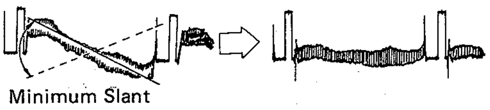
3. ADJUSTING THE SIGNAL SYSTEM

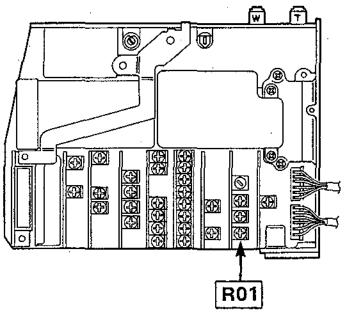
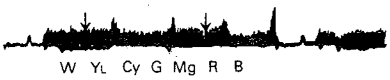
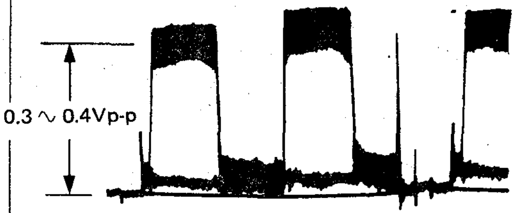
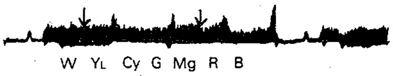
*Certain adjustments in this section require the iris setting to be checked. Be especially careful if the position or direction of the lights have been changed.
Some procedures require a black lens cap.

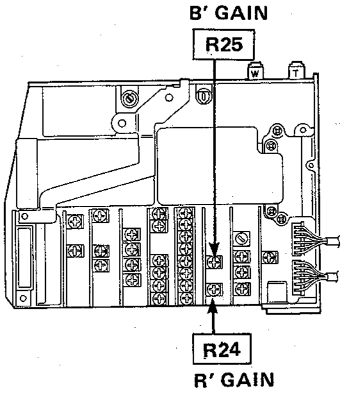
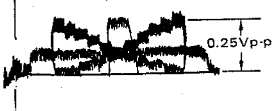
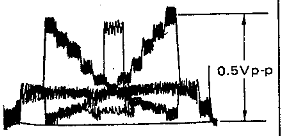
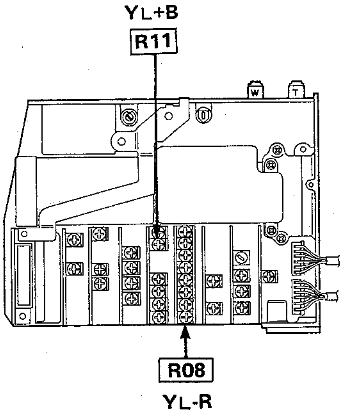
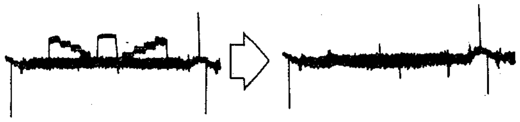
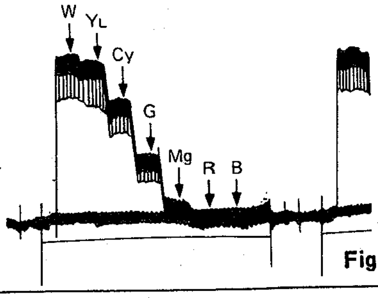
1.	**Setting of the LIGHTING POSITION and Rough Adjustment of the BLK SET**	Oscilloscope (H-rate 10:1) Gray scale pattern	B8 [PRE-PRO BOARD] Illumination lamp F12 (TP-B) R03 (B′ BLK SET) F13 (TP-R) R04 (R′ BLK SET) F14 (TP-G) R07 (YL BLK SET) [GAMMA BOARD] [B SET BOARD]	1. Adjust the position and angle of the lamp so that the lighting becomes uniform all over the gray scale pattern.  **Fig. 3-1** 2. Make a rough adjustment of the **BLK SET** as explained in **Item 3-12.**
2.	BIAS LIGHT Adjustment	Oscilloscope (H-rate 1:1)	VIDEO OUT R215 (LIGHT LEVEL) R216 (LIGHT BALANCE) [MOTHER BOARD]  *There may be cases where R216 is not provided.	○ **Close the Iris by lens cap** 1. Maintain the **Y SET-UP** level raised to about **100 mV (refer to Section 3-4).** 2. Conduct fine adjustment of **R215 (LIGHT LEVEL)** (to prevent the **Y SET-UP** level from varying by AGC ON/OFF operation.  **Fig. 3-2** 3. When the carrier is tilted, adjust **R216 (LIGHT BALANCE).**

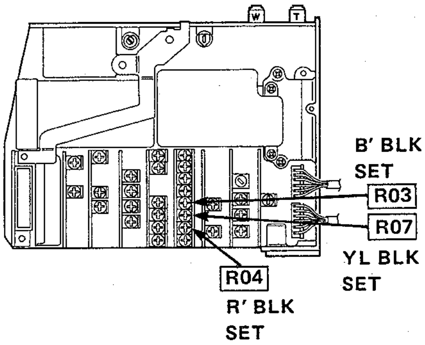
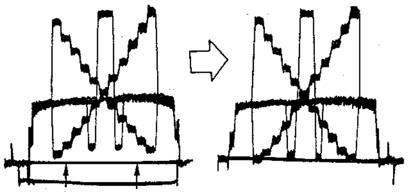
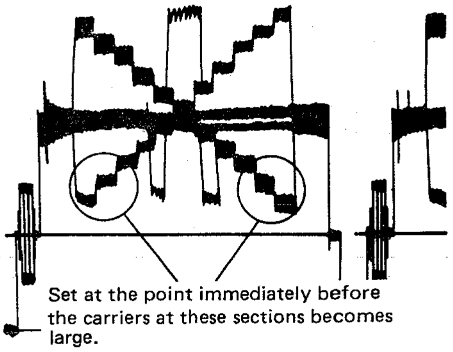
No.	Item	Measuring instrument	Test point and Adjustment part	Description
3.	**BL SH COMP.-Y. Adjustment (STATIC SHADING)**	**Oscilloscope** **(H-rate V-rate 1:1)**	**VIDEO OUT** **H BL COMP.-Y VR** **{R127 (H PB) R126 (H SAW)}** **V BL COMP.-Y VR** **{R219 (V PB) R218 (V SAW)}** [MOTHER BOARD]  H SAW R126 R127 H PB R218 R219 V SAW V PB	○ **Close the Iris by lens cap** 1. Measure **VIDEO OUT** at H-rate, and as shown in **Fig. 3-3 (a)**, adjust **R127 (H PB)** and **R126 (H SAW)** so that the carrier becomes flat.  **Fig. 3-3 (a)** 2. Measure **VIDEO OUT** at V-rate, and as shown in **Fig. 3-3 (b)**, adjust **R219 (V PB)** and **R218 (V SAW)** so that the carrier becomes flat.  **Fig. 3-3 (b)** 3. Measure the **VIDEO OUT**, and confirm that AUTO ←→ MANUAL switching of the IRIS SW. (or AGC SWITCH ON/OFF) causes no Y SET UP level variation. If varied, repeat **"3-2. BIAS LIGHT Adjustment."**
4.	**Y SET UP Adjustment**	**Oscilloscope** **(H-rate 10:1)**	**VIDEO OUT** **R04 (Y SET UP)** [ENC BOARD] 	○ **Close the Iris (AGC OFF)** 1. As shown in **Fig. 3-4**, adjust **R04 (Y SET UP)** so that the set-up level becomes **35 mV.**  **Fig. 3-4**

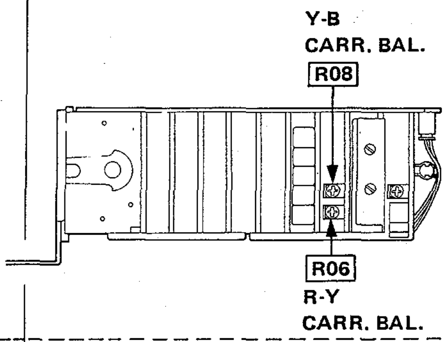
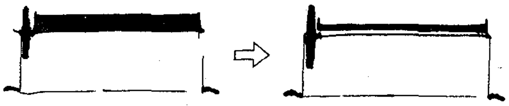
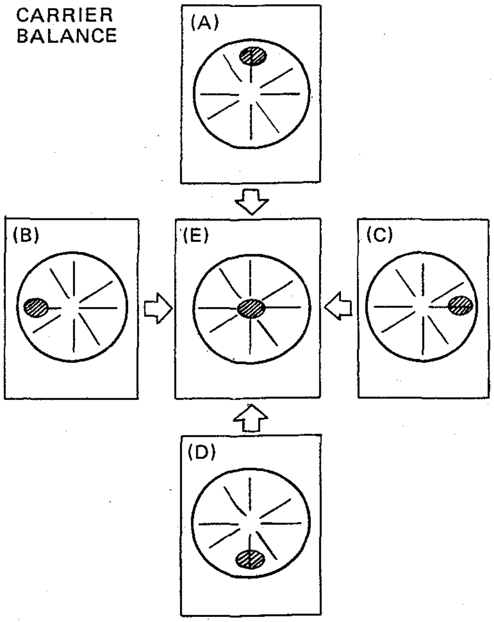
No.	Item	Measuring instrument	Test point and Adjustment part	Description
5.	Y GAIN Adjustment (GX-N7U/UT only)	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R12 (Y GAIN) [PRE-PRO BOARD] 	○ **Shoot the gray scale pattern and set the Iris to obtain 0.4VOB-WP at (B8).** (On the GX-N4U, refer to "2-5 Rough Adjustment of the Y GAIN.") 1. Adjust **R12 (Y GAIN)** so that the waveform at **VIDEO OUT** becomes **0.7 VPD-WP.**  **Fig. 3-5** **(Note)** 1. The crossing point lies at approx. 57% 2. Adjustment by **R43 (CHROMA LIMITER)** becomes easier immediately after the color disappears.
6.	Y KNEE Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R26 (Y KNEE) [AGC BOARD] 	○ **Set the Iris for a value of 0.9 V ~ 1 VPD-WP at VIDEO OUT.** (On the GX-N4U, adjust R213 (IRIS SET) to obtain 0.9VPD-WP.) 1. Adjust **R26 (Y KNEE)** so that the waveform peak are compressed to **0.77VPD-WP.**  **Fig. 3-6** **(Note)** Adjustment by **R43 (CHROMA LIMITER)** becomes easier immediately after the color disappears.
7.	AUTO IRIS Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R213 (IRIS SET) [MOTHER BOARD] 	○ **Set the IRIS SET SWITCH to AUTO.** 1. Adjust **R213 (IRIS SET)** so that the waveform becomes **0.7VPD-WP (± 0.021V).**  **Fig. 3-7** **(Note)** Adjustment by **R43 (CHROMA LIMITER)** becomes easier immediately after the color disappears. Set **R43** to its mechanical center after adjustments.

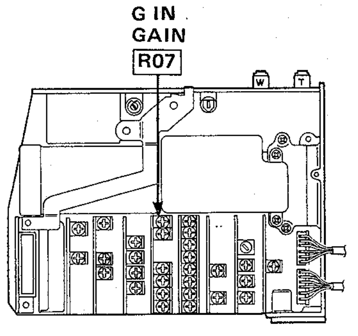
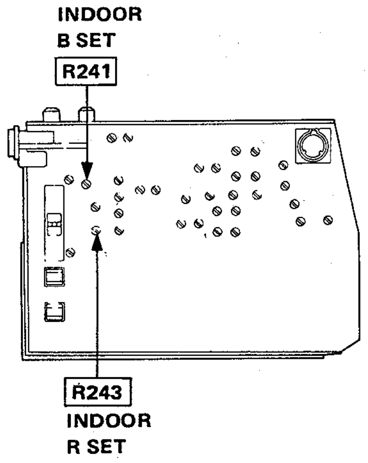
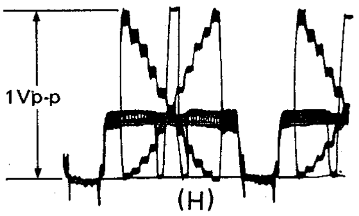
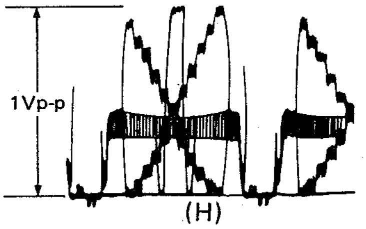
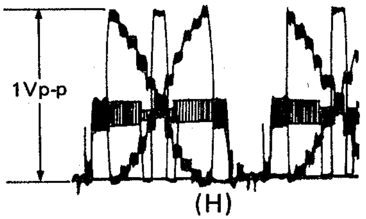
No.	Item	Measuring instrument	Test point and Adjustment part	Description
8.	DC BALANCE Adjustment	Oscilloscope (H-rate 10:1)	VIDEO OUT R24 (DC SET) [C. M. BOARD]  	**Adjustment procedure with oscilloscope** 1. Close the iris. 2. Adjust **R24 (DC SET)** to minimize the noise component of the waveform.  **Fig. 3-8 (a)**
		Vectorscope	VIDEO OUT	**Adjustment procedure with vectorscope** 1. Close the iris. 2. Adjust **R24 (DC SET)** to minimize the blue portion of the carrier on the vectorscope.  **Fig. 3-8 (b)**
9. (A)	PHASE SET Adjustment GROUP DELAY	Oscilloscope (H-rate 10:1) White pattern	J5 (Y-B) **R01 (PHASE SET-1)** J6 (R-Y) **R12 (PHASE SET-2)** **T01 (GROUP DELAY)** [ENC BOARD] [C.M. BOARD]  GROUP DELAY T01 PHASE SET-2 R12 R01 PHASE SET-1	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Shoot the white pattern and set **R01 (PHASE SET-1)** fully in the direction that causes the monitor image to become darkest blue. 2. Set **R12 (PHASE SET-2)** to the mechanical center. 3. Simultaneously measure J5 **(Y-B)** and J6 **(R-Y)**, and obtain the ADD mode. 4. While causing **R332 (H LIN-1)** to vary by ±30°, adjust **T01 (GROUP DELAY)** and **R12 (PHASE SET-2)** so that movement of the added waveforms is minimized as shown in **Fig. 3-9**.  **Fig. 3-9 (a)**

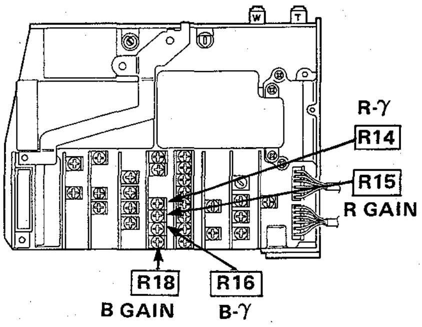
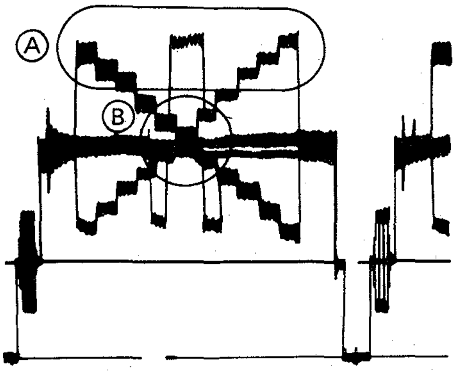
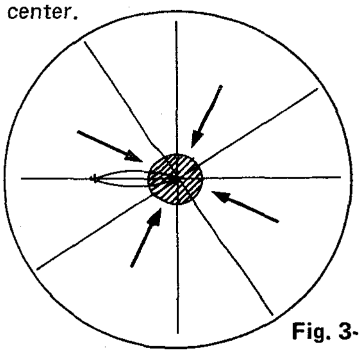
No.	Item	Measuring instrument	Test point and Adjustment part	Description
(B)	**PHASE SET (GX-N7U/UT)**	**Color bar pattern or Gray scale pattern** **Red filter (R60-46S)**	(D8) **(TP-B') R01 (PHASE SET-1)** [C.M. BOARD] [DET BOARD] 	○ **Shoot the color bar pattern and set the iris to obtain 0.7V PD-WP at VIDEO OUT.** 1. Mount the **red filter (R60-46S)** on the lens, and as shown in **Fig. 3-9 (b)**, adjust **R01 (PHASE SET-1)** so that the carrier is minimized. Adjust for minimum carrier concentrated wear base line  **Fig. 3-9 (b)**
(B)	**PHASE SET (GX-N4U/UT)**	**Color bar pattern or Gray scale pattern** **Red filter (R60-46S)**	(D8) **(TP-B') R01 (PHASE SET-1)** [C.M. BOARD] (D9) **(TP-R')** [DET BOARD]	1. Mount the **red filter (R60-46S)** on the lens. 2. Measure (D9), and as shown in **Fig. 3-9 (c)**, adjust **R213 (IRIS SET)** so that the waveform level becomes **0.3 ∿ 0.4Vp-p.**  **Fig. 3-9 (c)** 3. Measure (D8), and as shown in **Fig. 3-9 (d)**, adjust **R01 (PHASE SET-1)** so that the carrier is minimized. 4. After adjustment is completed, readjust AUTO IRIS by referring to **"3-7 AUTO IRIS Adjustment."** Adjust for minimum carrier concentrated wear base line  **Fig. 3-9 (d)**

No.	Item	Measuring instrument	Test point and Adjustment part	Description
10.	R' GAIN B' GAIN Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	D8 (TP-B') D9 (TP-R') [DET BOARD] R25 (B'GAIN) R24 (R' GAIN) [DET BOARD] 	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure D8, and as shown in **Fig. 3-10 (a)**, adjust **R25 (B' GAIN)** so that white portions become **0.25 Vp-p.** 2. Measure D9, and as shown in **Fig. 3-10 (b)**, adjust **R24 (R' GAIN)** so that white portions become **0.5 Vp-p.**  **Fig. 3-10 (a)**  **Fig. 3-10 (b)**
11.	YL-R YL+B Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern Color bar pattern Red filter (R60-46S)	F13 (TP-R) F14 (TP-G) [GAMMA BOARD] R08 (YL-R) [B SET BOARD] R11 (YL+B) [GAMMA BOARD] 	○ **Make a rough adjustment of the BLK SET as explaing in Item 3-12.** ○ **Shoot the gray scale pattern and set the Iris to obtain 0.4VOB-WPat B8** (In the case of GX-N4U/UT, measure F13 (TP-R) and reduce the quantity of light to around 0.5 V OB-WP by using an ND filter or another method.) 1. Measure F14 **(TP-G)** and mount the **red filter (R60-46S).** 2. Adjust **R08 (YL-R)** so that the carrier is minimzed. **(Fig. 3-11 (a))**  **Fig. 3-11 (a)** 3. Remove the **red filter (R60-46S),** and shoot the color bar pattern with AUTO IRIS. 4. Adjust **R11 (YL+B)** so that **red (R),** and **blue (B),** levels of the color bar pattern become equal.  **Fig. 3-11 (b)**

No.	Item	Measuring instrument	Test point and Adjustment part	Description
12.	BLK SET Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	(F12) (TP-B) R03 (B' BLK SET) (F13) (TP-R) R04 (R' BLK SET) (F14) (TP-G) R07 (Y_L BLK SET) [GAMMA BOARD] [B SET BOARD] **VIDEO OUT** 	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure (F14) under the H cycle and adjust **R07 (Y_L BLK SET)** so that signals under the waveforms (remaining line of OB) as shown in **Fig. 3-12 (a)** contact the reference line.  **Fig. 3-12 (a)** **(Note)** While conducting the above adjustment, exercise care not to cause the waveform dark portions to collapse. The waveform dark portions are in an optimum state when they very slightly contact the base line. 2. Measure **VIDEO OUT** at the H-rate, and adjust **R03 (B' BLK SET)** and **R04 (R' BLK SET)** to obtain setting at the point immediately before the carriers at the lower step section shown in **Fig. 3-12(b)** respectively become large.  Set at the point immediately before the carriers at these sections becomes large. **Fig. 3-12 (b)** 3. Observe (F12), (F13), and (F14) under the "H" rate, and confirm that the dark waveform portions are not excessibely flattened out. **(Note)** When the Y SET UP level varies by turning ON/OFF the AGC switch (IRIS switch), repeat step **"3-2 BIAS light Adjustment."**

No.	Item	Measuring instrument	Test point and Adjustment part	Description
13.	CARRIER BALANCE Adjustment	Oscilloscope (H-rate 10:1)	VIDEO OUT R08 (Y-B CARR. BAL.) R06 (R-Y CARR. BAL.) [ENC BOARD] 	**Adjustment procedure with oscilloscope** ○ **Close the iris (AGC OFF)** 1. Measure **VIDEO OUT** and alternately adjust **R06 (R-Y CARR. BAL.)** and **R08 (Y-B CARR. BAL.)** to minimize the carrier.  **Fig. 3-13(a)**
		Vectorscope	VIDEO OUT	**Adjustment procedure with vectorscope** ○ **Close the iris (AGC OFF)** 1. Adjust **R06 (R-Y CARR. BAL.)** and **R08 (Y-B CARR. BAL.)** so that the carrier comes to the center of the vectorscope.  **Fig. 3-13 (b)** **(Note)** Repeat the adjustment procedure from **"3-12 BLK Set Adjustment"**, if the position of the carrier is distorted when the AGC switch (IRIS switch) is turned ON/OFF.

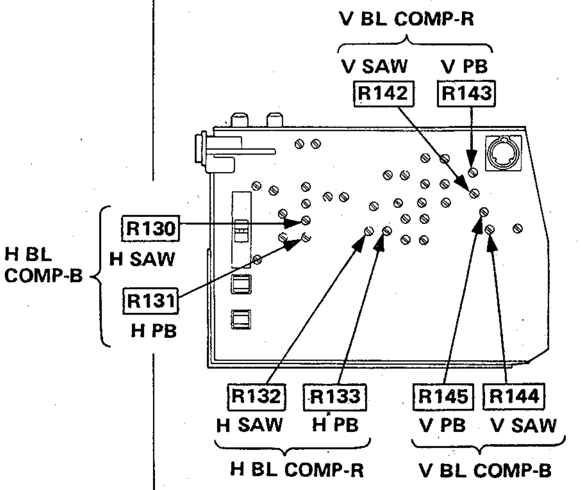
No.	Item	Measuring instrument	Test point and Adjustment part	Description
14.	**R, G, B GAIN Adjustment**	**Oscilloscope** (**H-rate 10:1**) **Gray scale pattern**	**(F12) (TP-B) R241 (INDOOR B SET)** **(F13) (TP-R) R243 (INDOOR R SET)** [MOTHER BOARD] **(F14) (TP-G)** [GAMMA BOARD] **R07 (G IN GAIN)** [GAMMA BOARD]  	○ **Set the IRIS CNTROL SWITCH to AUTO** **(Note)** The AUTO WHITE SWITCH must be set at the **"INDOOR"** position. 1. Measure **(F14)** and adjust **R07 (G IN GAIN)** so that the portion shown in **Fig. 3-14 (a)** becomes **1Vp-p.**  **Fig. 3-14 (a)** 2. Measure **(F12)** and adjust **R241 (INDOOR B SET)** so that the portion shown in **Fig. 3-14 (b)** becomes **1Vp-p.**  **Fig. 3-14 (b)** 3. Measure **(F13)** and adjust **R243 (INDOOR R SET)** so that the portion shown in **Fig. 3-14 (c)** becomes **1Vp-p.**  **Fig. 3-14 (c)**

No.	Item	Measuring instrument	Test point and Adjustment part	Description
15.	COLOR γ WHITE BALANCE *Adjustment*	**Oscilloscope** (H-rate 10:1) ***Gray scale pattern***	**VIDEO OUT** **R15 (R GAIN)** **R18 (B GAIN)** **R14 (R-γ)** **R16 (B-γ)** [GAMMA BOARD]  	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure the **VIDEO OUT**, and adjust **R15 (R GAIN)** and **R18 (B GAIN)** so that the carrier at section Ⓐ shown in **Fig. 3-15 (a)** is minimized.  **Fig. 3-15 (a)** 2. Adjust **R14 (R-γ)** and **R16 (B-γ)** so that the carrier at section Ⓑ shown in **Fig. 3-15** is minimized. 3. When carriers remain in the dark sections of waveforms, repeat **"3-12 BLK SET Adjustment."**
		Vectorscope **Gray scale pattern**	**VIDEO OUT**	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. As shown **Fig. 3-15 (b)**, adjust **R15 (R GAIN)**, **R18 (B GAIN)**, **R14 (R-γ)**, and **R16 (B-γ)** so that the carriers converge at the center.  **Fig. 3-15 (b)** 2. Concurrently observe the oscilloscope, and when carriers are found to be remaining in the dark sections of waveforms, repeat **"3-12 BLK SET Adjustment."**

<table>
<tr><th>No.</th><th>Item</th><th>Measuring instrument</th><th>Test point and Adjustment part</th><th>Description</th></tr>
<tr>
<td>16.</td>
<td>R, B
BL SH
COMP.
Adjustment</td>
<td>Oscilloscope
(H-rate
V-rate
10:1)</td>
<td>

Ⓕ12 (TP-B) H BL COMP.-B VRs
R131 (H PB)
R130 (H SAW)
V BL COMP.-B VRs
R145 (V PB)
R144 (V SAW)

Ⓕ13 (TP-R) H BL COMP.-R VRs
[GAMMA BOARD]
R133 (H PB)
R132 (H SAW)
V BL COMP.-R VRs
R143 (V PB)
R142 (V SAW)
[MOTHER BOARD]



</td>
<td>

○ **Attach the lens cap and set the IRIS CONTROL SWITCH to AUTO.**

1. Measure Ⓕ12 under the H-rate. When noise elements are not flat, adjust **R131 (H PB)** and **R130 (H SAW)** to cause the elements to become flat.

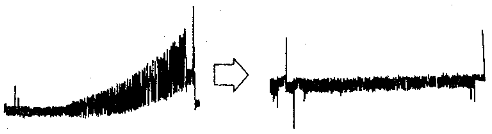


Fig. 3-16 (a)

2. Measure Ⓕ12 under the V-rate. When noise elements are not flat, adjust **R145 (V PB)** and **R144 (V SAW)** to cause the elements to become flat.

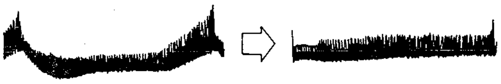


Fig. 3-16 (b)

(Note) If the noise elements can not be determined, adjust **R03 (B' BLK SET)** on the B SET BOARD until there is noise output.

3. Measure Ⓕ13 under the H-rate. When noise elements are not flat, adjust **R133 (H PB)** and **R132 (H SAW)** to cause the elements to become flat.

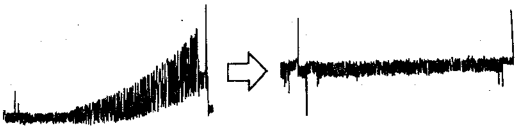


Fig. 3-16 (c)

4. Measure Ⓕ13 under the V-rate. When noise elements are not flat, adjust **R143 (V PB)** and **R142 (V SAW)** to cause the elements to become flat.

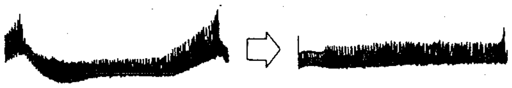


Fig. 3-16 (d)

(Note) If the noise elements can not be determined, adjust **R04 (R' BLK SET)** on the B SET BOARD until there is noise output.

5. Readjust the unit according to **"3-12 BLK SET Adjustment"** and **"3-15 COLOR γ WHITE BALANCE Adjustment"**.

</td>
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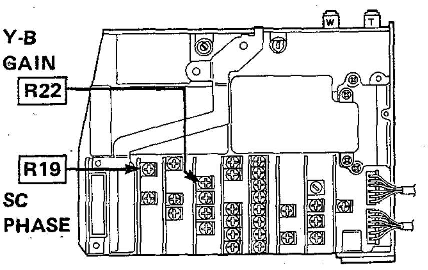
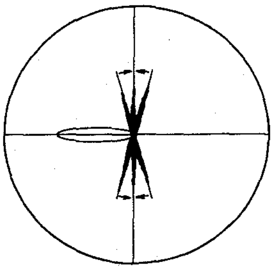
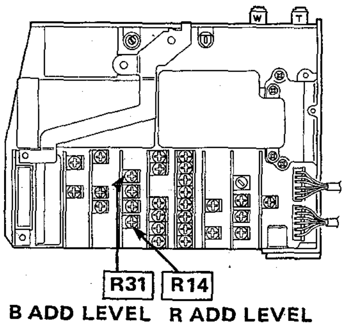
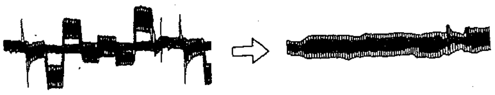
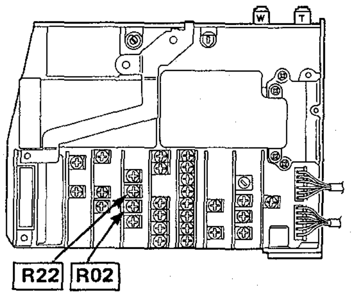
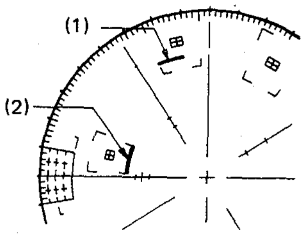
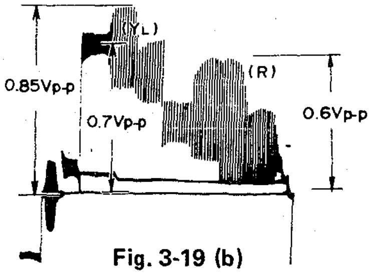
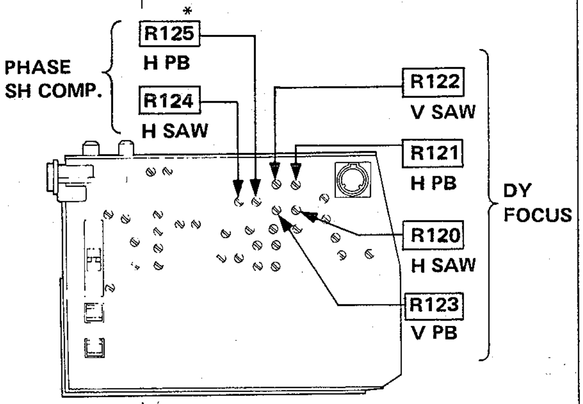
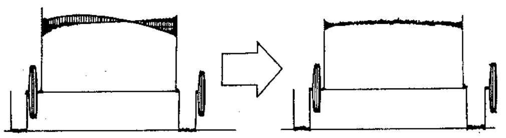
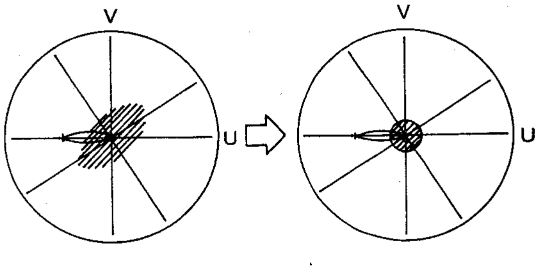
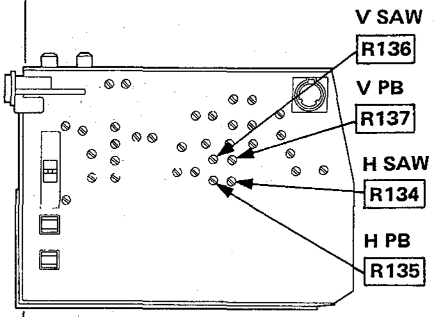
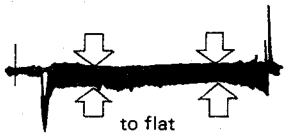
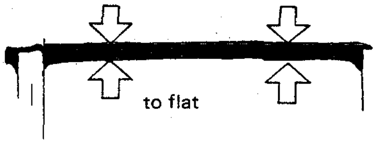
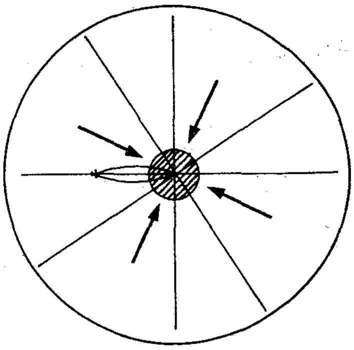
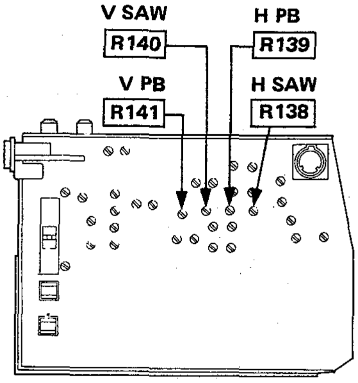
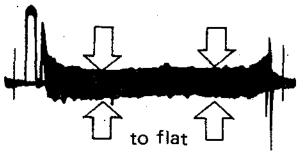
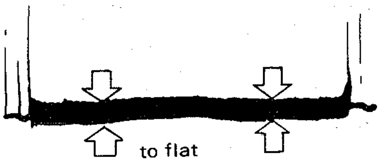
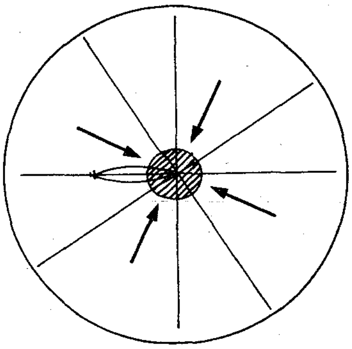
</table>

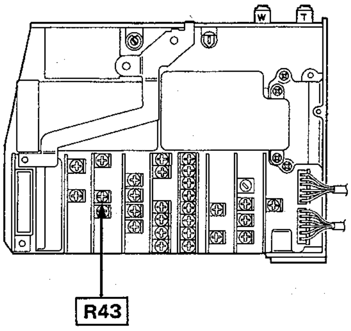
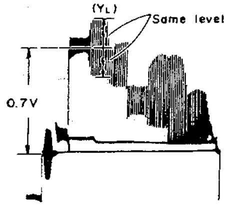
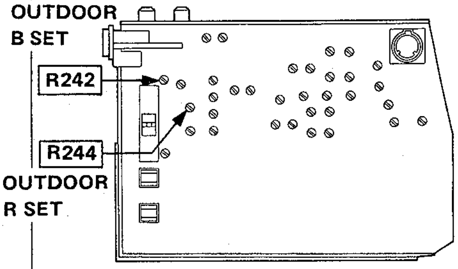
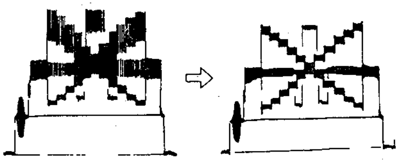
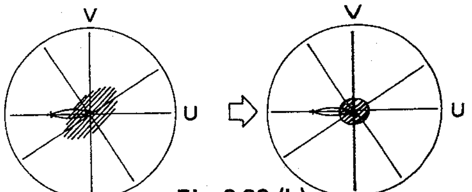
No.	Item	Measuring instrument	Test point and Adjustment part	Description
17.	**SC PHASE Adjustment**	**Vectorscope** **Color bar pattern**	**VIDEO OUT** **R22 (Y-B GAIN)** [CDP BOARD] **R19 (SC PHASE)** [ENC BOARD] 	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure the vectorscope, and preset **R22 (Y-B GAIN)** so that the (Y-B)-side output becomes "0" as shown in **Fig. 3-17.** 2. Adjust **R19 (SC PHASE)** so that the (R-Y)-side carriers coincide with the R-Y axis as shown in **Fig. 3-17.**  **Fig. 3-17** **(Note)** When a vectorscope is not available, observe the **monitor TV** by shooting the color bar pattern, and adjust **R19 (SC PHASE)** so that an optimum color balance is obtained. 3. After adjustment is completed, return **R22 (Y-B GAIN)** to an appropriate setting position.
18.	**R ADD, B ADD Adjustment**	**Oscilloscope** (**H-rate 10:1**) **Color bar pattern**	(G15) (G16) [CDP BOARD] **R14 (R ADD LEVEL)** **R31 (B ADD LEVEL)** [CDP BOARD] 	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure (G15) and adjust **R14 (R ADD LEVEL)** so that the carrier becomes flat. 2. Measure (G16) and adjust **R31 (B ADD LEVEL)** so that the carrier becomes flat.  **Fig. 3-18**

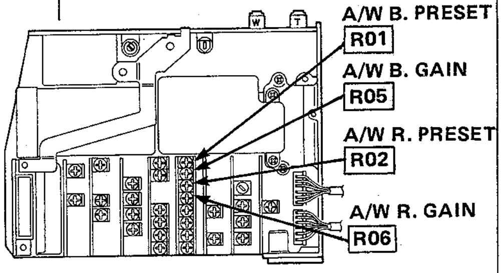
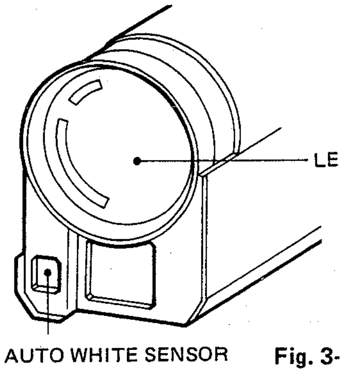
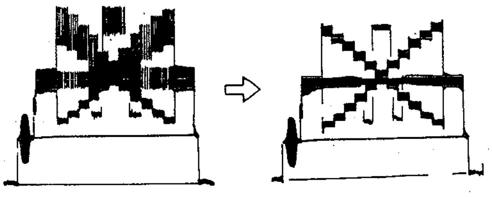
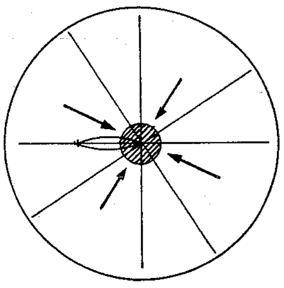
No.	Item	Measuring instrument	Test point and Adjustment part	Description
19.	**CHROMA GAIN Adjustment**	**Vectorscope** **Color bar pattern (CC-2T)**	**VIDEO OUT** **R22 (Y-B GAIN)** **R02 (R-Y GAIN)** [CDP BOARD]  	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Adjust **R02 (R-Y GAIN)** so that the red level is positioned at **(1)**, shown in **Fig. 3-19 (a)**. Also adjust **R22 (Y-B GAIN)** so that the yellow level is positioned at **(2)**, in the same **Fig. 3-19 (a)**.  **Fig. 3-19 (a)** **(Note)** When a vectorscope is not available, conduct adjustment by the following method.
		Oscilloscope **Color bar pattern (CC-2T)**	**VIDEO OUT**	1. Measure the VIDEO OUT, and adjust **R22 (Y-B GAIN)** so that the **yellow section** (YL) shown in **Fig. 3-19 (b)** becomes **0.85V.** 2. Next, adjust **R02 (R-Y GAIN)** so that the **red section (R)** becomes **0.6V.**  **Fig. 3-19 (b)** **(Note)** After adjustment is completed, shoot the subject and confirm that natural coloring is obtained.

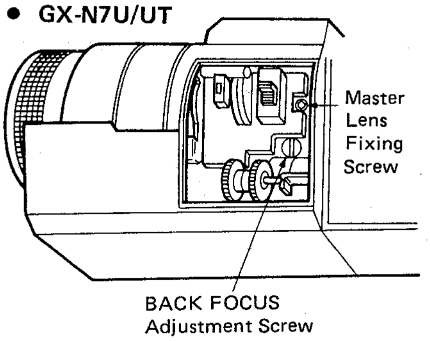
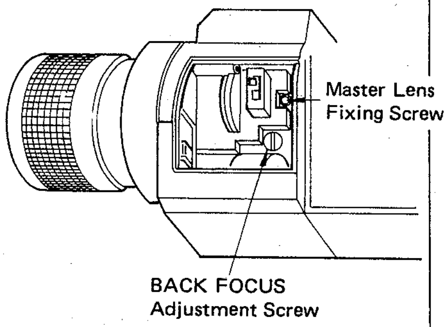
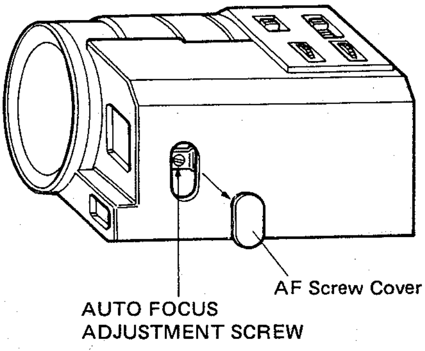
No.	Item	Measuring instrument	Test point and Adjustment part	Description
20.	PHASE SH COMP. Adjustment and FINE Adjustment of DY FOCUS	Oscilloscope (H-rate 10:1) Orange-colored subjects (JVC ORANGE color is preffered.) White pattern	VIDEO OUT PHASE SH COMP. VR R124 (H SAW) R125 (H PB) DY FOCUS VR R120 (H SAW) R121 (H PB) R122 (V SAW) R123 (V PB) [MOTHER BOARD]  * R125 H PB PHASE SH COMP. R124 H SAW R122 V SAW R121 H PB R120 H SAW R123 V PB DY FOCUS *There may be cases where R125 is not provided	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Observe the **Monitor TV screen** while shooting at an orange-colored subject, and adjust **R124 (H SAW)** and **R125 (H PB)** so that the entire screen becomes uniformly orange. **(Note)** 1. There may be cases where R125 is not provided. 2. Conduct this adjustment only when required. 2. Shoot the white pattern and observe the **VIDEO OUT** under the H rate. 3. Adjust **R120 (H SAW), R121 (H PB), R122 (V SAW),** and **R123 (V PB)** so that the carrier can be minimized and becomes flat.  **Fig. 3-20 (a)** **(Note)** Adjustment must be limited to the fine adjustment.
		Vectorscope White pattern	VIDEO OUT	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. As shown in **Fig. 3-20 (b)**, adjust **R124 (H SAW)** and **R125 (H PB)** so that the carrier is minimized and positioned at the center. 2. Similarily adjust **R120 (H SAW), R121 (H PB), R122 (V SAW),** and **R123 (V PB)** so that the carrier is minimized and positioned at the center.  **Fig. 3-20 (b)**

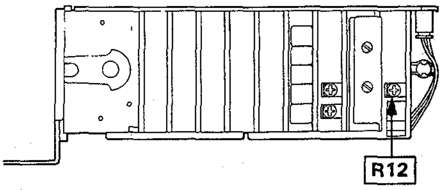
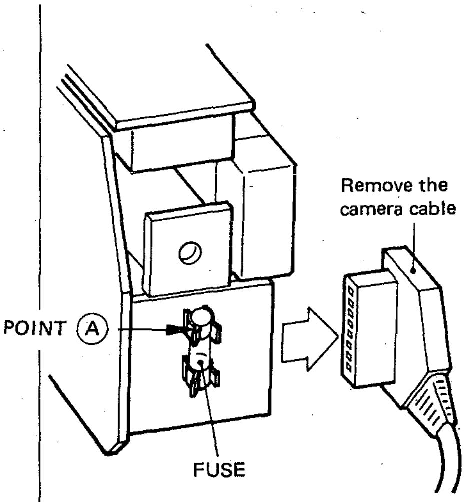
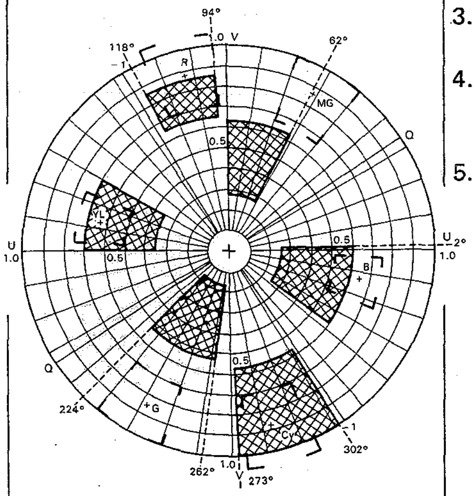
No.	Item	Measuring instrument	Test point and Adjustment part	Description
21.	**SHADING COMP. Adjustment (R-CH)**	**Oscilloscope** **(H-rate V-rate 10:1)** **White pattern**	**J6 (R-Y)** [ENC BOARD] **SH COMP.-R VR** **R134 (H SAW)** **R135 (H PB)** **R136 (V SAW)** **R137 (V PB)** [MOTHER BOARD]  V SAW R136 V PB R137 H SAW R134 H PB R135	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure **J6** at H-rate and adjust **R134 (H SAW)** and **R135 (H PB)** so that the waveform becomes flat.  **Fig. 3-21 (a)** 2. Measure **J6** at V-rate and adjust **R136 (V SAW)** and **R137 (V PB)** so that the wave form becomes flat.  **Fig. 3-21 (b)**
		Vectorscope **Gray scale pattern**	**VIDEO OUT**	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Alternately adjust **R134 (H SAW), R135 (H PB), R136 (V SAW)** and **R137 (V PB)** so that the carrier displayed on the vectorscope is positioned at center and minimized.  **Fig. 3-21 (c)** **(Note)** The adjustment can be facilitated by raising the gain of the vectorscope.

No.	Item	Measuring instrument	Test point and Adjustment part	Description
	(B-CH)	**Oscilloscope** (H-rate V-rate 10:1) **White pattern**	**(J5) (Y-B)** **SH COMP.-B VR** [ENC BOARD] **R138 (H SAW)** **R139 (H PB)** **R140 (V SAW)** **R141 (V PB)** [MOTHER BOARD]  V SAW H PB R140 R139 V PB H SAW R141 R138	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure (J5) at H-rate and adjust **R138 (H SAW)** and **R139 (H PB)** so that the waveform becomes flat.  **Fig. 3-21 (d)** 2. Measure (J5) at V-rate and adjust **R140 (V SAW)** and **R141 (V PB)** so that the waveform becomes flat.  **Fig. 3-21 (e)**
		Vectorscope **Gray scale pattern**	**VIDEO OUT**	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Alternately adjust **R138 (H SAW), R139 (H PB), R140 (V SAW)** and **R141 (V PB)** so that the carrier displayed on the vectorscope is positioned at center and minimized.  **Fig. 3-21 (f)** **(Note)** The adjustment can be facilitated by raising the gain of the vectorscope.

No.	Item	Measuring instrument	Test point and Adjustment part	Description
22.	CHROMA LIMITER Adjustment	Oscilloscope (H-rate 10:1) Color bar pattern (CC-2T)	VIDEO OUT R43 (CHROMA LIMITER) [AGC BOARD]  	○ **Set the iris so that the Y level of Yellow becomes 0.7V under VIDEO OUT (Setting is facilitated by preventing the color from appearing through turning R43).** (On GX-N4U/UT set R213 (IRIS SET); after adjustment is completed, readjust the AUTO IRIS.) 1. Adjust **R43 (CHROMA LIMITER)** to a point just before the yellow carrier becomes compressed, as shown in **Fig. 3-22.**  **Fig. 3-22**
23.	OUTDOOR R.B GAIN Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R242 (OUTDOOR B SET) R244 (OUTDOOR R SET) [MOTHER BOARD]  	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Mount a **80B C.C. filter** on the lens and set the AUTO WHITE SWITCH to **"OUT-DOOR."** 2. Alternately adjust **R242 (OUTDOOR B SET)** and **R244 (OUTDOOR R SET)** to minimize the carrier of the waveform.  **Fig. 3-23 (a)**
		Vectorscope Gray scale pattern	VIDEO OUT	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Mount a **80B C.C. filter** on the lens and set the AUTO WHITE SWITCH to **"OUT-DOOR."** 2. Alternately adjust **R242 (OUTDOOR B SET)** and **R244 (OUTDOOR R SET)** so that the carrier displayed on the vectorscope is positioned at center and minimized.  **Fig. 3-23 (b)**

No.	Item	Measuring instrument	Test point and Adjustment part	Description
24.	AUTO WHITE BALANCE Adjustment (GX-N7U/UT only)	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R01 (A/W B. PRESET) R02 (A/W R. PRESET) R05 (A/W B. GAIN) R06 (A/W R. GAIN) [B. SET BOARD]  A/W B. PRESET R01 A/W B. GAIN R05 A/W R. PRESET R02 A/W R. GAIN R06  Fig. 3-24 (a)	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Set the **AUTO WHITE SWITCH** to **"AUTO"** and preset **R05 (A/W B. GAIN)** and **R06 (A/W R. GAIN)** at the mechanical centers. 2. As shown in **Fig. 3-24 (b)**, adjust **R01 (A/W B. PRESET)** and **R02 (A/W R. PRESET)** so that the carrier is minimized. 3. Next, mount **W4 C.C. filter** on lens and mount **No. 80B C.C. filters** on both the lens and the A/W sensor (refer to **Fig. 3-24 (a)**), and as shown in **Fig. 3-24 (b)**, adjust **R05 (A/W B. GAIN)** and **R06 (A/W R. GAIN)** so that the carrier is minimized.  Fig. 3-24 (b) 4. Repeat above steps 2 and 3, and adjust so that carrier difference between the two is eliminated.
		Vectorscope Gray scale pattern	VIDEO OUT  Fig. 3-24 (c)	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Set the **AUTO WHITE SWITCH** to **"AUTO"** and preset **R05 (A/W B. GAIN)** and **R06 (A/W R. GAIN)** at the mechanical centers. 2. As shown in **Fig. 3-24 (c)**, adjust **R01 (A/W B. PRESET)** and **R02 (A/W R. PRESET)** so that the carrier is positioned at the center. 3. Next, mount **W4 C.C. filter** on lens and mount **No. 80B C.C. filters** on both the lens and the A/W sensor (refer to **Fig. 3-24 (a)**), and as shown in **Fig. 3-24 (c)**, adjust **R05 (A/W B. GAIN)** and **R06 (A/W R. GAIN)** so that the carrier is positioned at the center. 4. Repeat above steps 2 and 3, and adjust so that carrier transfer between the two is eliminated.

No.	Item	Measuring instrument	Test point and Adjustment part	Description
25.	**BACK FOCUS Adjustment**	**Monitor TV** **Siemens chart**	**VIDEO OUT** **Back Focus Adjustment Screw** ● **GX-N7U/UT**  **Fig. 3-25 (a)** ● **GX-N4U/UT**  **Fig. 3-25 (b)**	○ **Open the iris in a dark location.** 1. Place the **Siemens chart** at least 3 m from the camera. (The chart should be placed as far away as possible.) 2. Adjust the focus to the chart in the TELE position and confirm that the focus is not disturbed when the camera is set to the WIDE position. 3. If the focus is disturbed, loosen the **Master Lens Fixing Screw** and then adjust the **Back Focus with the back focus adjustment tool** until correct focus is established. 4. Repeat **step 3 and 4** as necessary to obtain optimum focus.
26.	**AUTO FOCUS Adjustment (GX-N7U/UT only)**	**Monitor TV** **Siemens chart**	**VIDEO OUT** **AUTO FOCUS ADJ. Screw**  **Fig. 3-26**	○ **Open the iris in a dark location.** 1. Detach the screw cover shown in **Fig. 3-26.** 2. Place the **Siemens chart** 2 m distant from the lens and shoot this chart after turning the ZOOM RING fully to the TELE side. 3. Set the **FOCUS SWITCH** to "**AUTO.**" 4. Rotate the FOCUS RING to the near end/far end to cause AUTO FOCUS operation, and confirm that optimum focus is obtained. 5. If the focus is disturbed, rotate the **AUTO FOCUS ADJ. SCREW** while keeping the **FOCUS SWITCH** set at "**AUTO,**" and by adjusting this screw, obtain optimum focus. 6. After adjustment is completed, reinstall the screw cover. **(Note)** Under adjustment in this section, only the measuring distance can be adjusted. As to adjustment of the infrared-ray spot, refer to the Lens Manual.

No.	Item	Measuring instrument	Test point and Adjustment part	Description
27.	BATTERY ALARM Adjustment	DC Power Supply, DC DC Voltmeter	R LED in EVF R12 (ALARM SET)   Fig. 3-27	○ **Disconnect the camera cable.** 1. Connect a DC power supply and DC voltmeter to **Point** Ⓐ shown in the chart on the left, and apply exactly **10.8V.** 2. Adjust **R12 (ALARM SET)** to the point where **LED (R)** in the electronic viewfinder just stops flickering and goes out.
28.	FINAL CHECK	Vectorscope Oscilloscope Color bar pattern, Gray scale pattern & Others	VIDEO OUT  94° 1.0 V 118° 62° R MG Q 0.5 YL U 1.0 U 2° 1.0 B Q 224° G CY 302° 262° 1.0 V 273° Fig. 3-28	1. Shoot the color bar pattern (CC-2T) in the Auto Iris mode and display the result on a vectorscope. Confirm that the respective color carriers are at the locations indicated in the chart on the right. 2. If the results are not satisfactory, perform readjustment in **3-9, 3-17, 3-19,** etc. 3. Check the operation of Iris Compensation as well as all other switches and functions. 4. Shoot the gray scale pattern and check γ, White Balance, Carrier Balance, Y SET UP etc. at VIDEO OUT. 5. Shoot an appropriate subject and check colors, camera functions etc.

4. ADJUSTMENT OF THE ELECTRONIC VIEWFINDER

- **Preparation**
  - ○ Proceed with this adjustment after completing adjustment of the camera body side (except when only the EVF is to be adjusted). When only the EVF is to be adjusted, use a 5V supply voltage and **EVF VIDEO** signal of the standard signal level **(2Vp-p)**.

- **Presetting**

1) Iris switch	**→ " Ⓐ " (AUTO)**
2) " Ⓐ Iris compensation" switch	**→ "0"**
3) White balance	**→ " 💡 " (INDOOR)**
4) R860 BRIGHT VR	**→ To obtain a picture**

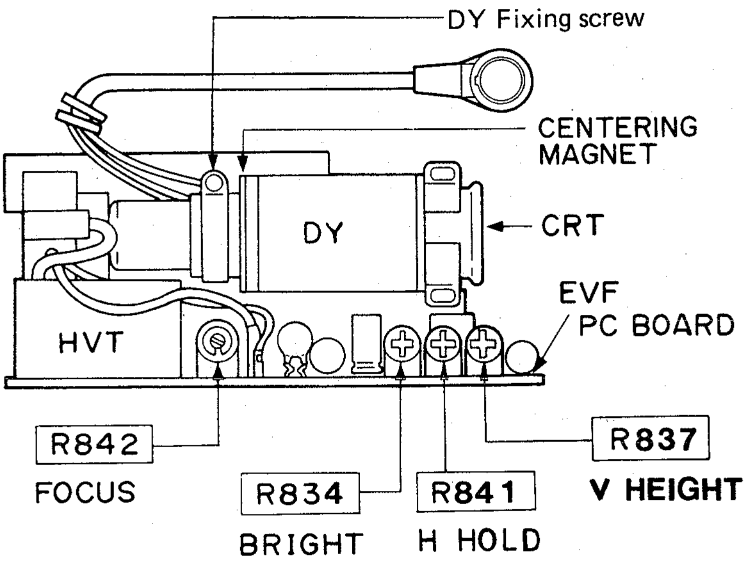
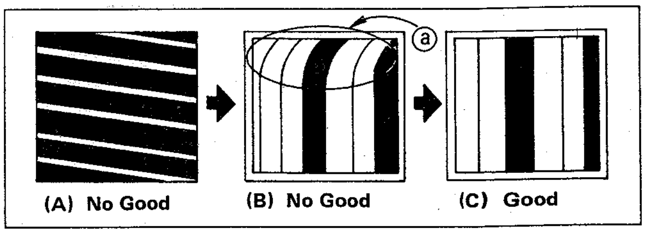


Fig. 4-1 Adjustment location of EVF

- **Adjusting procedures**

	ITEM	PATTERN OR SUBJECT	ADJUSTMENT PARTS	ADJUSTING METHOD
1	**HORIZONTAL SYNC**	Any gray scale pattern, monoscope pattern, or or resolution pattern is OK.	**R841 H. HOLD VR**	1) Set **R841 H. HOLD VR** fully-counterclockwise (in the high H. freq. direction) **Fig. 4-2 (A)** 2) Return **R841 H. HOLD VR** clockwise. Stop turning it when synchronization is adjusted and the bend appearing on the screen upper portion ⓐ is corrected. **Fig. 4-2 (A) → (B) → (C)** **(Note)** Adjustment is facilitated when conducted while shooting a linear pattern such as a color bar pattern.  **(A) No Good** **(B) No Good** **(C) Good** **Fig. 4-2 Adjustment of H. HOLD (using Color bar pattern)**

	ITEM	PATTERN OR SUBJECT	ADJUSTMENT PARTS	ADJUSTING METHOD
2	VERTICAL AMPLITUDE	Monoscope pattern or crosshatch pattern	R837 V. HEIGHT VR	Adjust **R837 V. HEIGHT VR** so that the amplitude of the pattern is normal.
3	PICTURE LOCATION		**Centering magnet of the Deflection Yoke**	Adjust the **CENTERING MAGNET** so that the center of the pattern coincides with the center of the frame of the EVF screen.
4	BRIGHTNESS	Gray scale pattern	R834 BRIGHT VR	Turn the **R834 BRIGHT VR** while observing the EVF screen and stop turning it just before the pattern's black portion becomes invisible. **(Note)** Shoot the gray scale pattern so that it fills the whole area of the frame.
5	SCREEN TILT/SCAN WIDTH ADJUSTMENT	Mono SCO pattern or cross hatch pattern	**D.Y. installation position**	1. Loosen the D.Y. fixing screw. 2. Rotate the D.Y. and cause the screen to become horizontal against the mask. 3. Move the D.Y. forward and backward so that the scan width becomes about 90% overscanned. 4. Tighten the D.Y. fixing screw and then confirm that the screen position has not deviated.
6	FOCUS	Gray scale pattern or monoscope pattern	R842 FOCUS VR	While monitoring the EVF screen turn **R842 FOCUS VR** as far right as possible, as long as the picture is in good focus.
7	HIGH VOLTAGE CHECK		————	Connect the high voltage meter of CRT anode and make sure that the meter indicator is within **2.5 ± 0.3 kV.**
8	FINAL CHECK	Shoot patterns or other subjects and operate **zoom, focus, iris control switch,** VTR switch, etc.. Thus make sure that brightness, contrast, focus, size and location of the picture, **iris indication, VTR start/stop indication** are all proper. Operate also the WHITE BALANCE SWITCH and make sure that white balance indication (LED indication on the CRT mask area) is properly achieved. Further reduce the camera supply voltage (12V input) and make sure that **battery alarm indication** on the EVF is properly achieved when the voltage is below **ca. 10.8V.**		

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Third Issue
8411 O
M.S.

GX-N7U/UT
GX-N4U/UT Modified One
PARTS LIST

CONTENTS

PARTIAL CHANGES IN THE PARTS LIST

- SYSTEM ASSEMBLY REPLACEMENT PARTS LIST 3
- PRINTED CIRCUIT BOARD PARTS LIST
  1. DIFFERENCE BETWEEN CA-1071A AND CA-1071B/CA-1071C 6
  2. DIFFERENCE BETWEEN CA-A001A AND CA-A003A/CA-A005A 7
  3. DIFFERENCE BETWEEN CA-A002A AND CA-A004A 8
  4. CA-B001A PREPROCESS BOARD 8
  5. CA-C001A CARRIER MATRIX BOARD 9
  6. CA-D001A DETECTOR BOARD 9
  7. DIFFERENCE BETWEEN CA-E001A AND CA-E004A/CA-E005A 9
  8. CA-E003A BLACK SET/AUTO WHITE BOARD 10
  9. CA-F001A COLOR GAMMA BOARD 10
  10. CA-G001A CDP BOARD 11
  11. CA-H001A AGC BOARD 11
  12. DIFFERENCE BETWEEN CA-J001A AND CA-J003A 12
  13. CA-K001A SSG BOARD 12
  14. DIFFERENCE BETWEEN CA-L001A AND CA-L003A 12
  15. DIFFERENCE BETWEEN CA-M001A AND CA-M003A 13
  16. DIFFERENCE BETWEEN CA-M002A AND CA-M004A 13
  17. CA-2071A PREAMP BOARD 13
  18. CA-6071A EVF BOARD 13
  19. PACKING PARTS LIST 13

GX-N7U/UT : No. 5506B
GX-N4U/UT : No. 5519B
Nov. 1984

IMPORTANT SAFETY NOTICE:

Components identified by the ⚠ symbol in this parts information have special characteristics for safety.
These critical safety components are designed to "fail safe" under abnormal conditions. The failure of any one component often causes stress in other components which could lead to smoke or fire or other hazards. Because of this, components are selected and tested under actual fault conditions to ensure safe operation. Replacement with anything other than the identical JVC part may present a hazard.

NOTE 1 PART SUPPLY OF NO PART NUMBER

The parts indicated with —— in the Part No. column will not be supplied.

NOTE 2 DECODING OF RESISTOR, CAPACITOR AND TOLERANCE

RESISTOR All resistance values in ohms K: 1000 M: 1000000	
C R	Carbon Resistor
CH MG R	Chip Metal Glaze Resistor
CH V R	Chip Variable Resistor
C MF R	Coating Metal Film Resistor
Comp. R	Composition Resistor
F R	Fusible Resistor
HV R	High Voltage Resistor
LPTC R	Linear Positive Temperature Coefficient Resistor
MF R	Metal Film Resistor
MG R	Metal Glaze Resistor
OM R	Oxide Metal Film Resistor
P R	Plate Resistor
UNF R	Nonflammable Resistor
V R	Variable Resistor

CAPACITOR Capacitance values in pF or in μF	
BP E Cap.	Bi-Polar (or Non-Polar) Electrolytic Capacitor
C Cap.	Ceramic Capacitor
CH AL BP Cap.	Chip Aluminum Bi-Polar Capacitor
CH AL BP E Cap.	Chip Aluminum Bi-Polar Electrolytic Capacitor
CH AL E Cap.	Chip Aluminum Electrolytic Capacitor
CH C Cap.	Chip Ceramic Capacitor
CH Tan. E Cap.	Chip Tantalum Electrolytic Capacitor
E Cap.	Electrolytic Capacitor
M Cap.	Mylar Capacitor
MM Cap.	Metalized Mylar Capacitor
MP Cap.	Metalized Polystyrol Capacitor
MPP Cap.	Metalized PP Capacitor
PP Cap.	Polypropylene Capacitor
PS Cap.	Polystyrol Capacitor
Tan. Cap.	Tantalum Capacitor

TOLERANCE	
F	±1%
G	±2%
J	±5%
K	±10%
M	±20%
N	±30%
H	$^{+50}_{-10}\%$
P	$^{+100}_{-0}\%$
R	$^{+30}_{-10}\%$
Z	$^{+80}_{-20}\%$

PARTIAL CHANGES IN THE PARTS LIST

■ SYSTEM ASSEMBLY REPLACEMENT PARTS LIST

*NOTE1 From July 1984 production
*NOTE2 From October 1984 production

View No.	Detail of change		Part Name	Interchange-ability	Remarks
	Previous	Present			
1	CA-1071A	CA-1071B	MOTHER BOARD	○	For GX-N7U/UT, *NOTE1
″	CA-1071B	CA-1071C	″	○	″ *NOTE2
″	CA-1073A	CA-1073B	″	○	For GX-N4U/UT, *NOTE1
2	CA-A001A	CA-A003A	AUDIO BOARD	×	For GX-N7U/UT, *NOTE1
″	CA-A003A	CA-A005A	″	×	″ *NOTE2
″	CA-A002A	CA-A004A	″	×	For GX-N4U/UT, *NOTE1
6	CA-E001A	CA-E004A	BLACKSET/AUTO WHITE BOARD	×	For GX-N7U/UT, *NOTE1
″	CA-E004A	CA-E005A		×	″ *NOTE2
10	CA-J001A	CA-J003A	ENC. BOARD	×	*NOTE1
12	CA-L001A	CA-L003A	VRT TRIG & BATT. ALARM BOARD	×	*NOTE1
13	CA-M001A	CA-M003A	MIC BOARD	×	For GX-N7U/UT, *NOTE1
″	CA-M002A	CA-M004A	″	×	For GX-N4U/UT, *NOTE1
15	———	CM42485-001	P. AMP Insulator	–	To be attached on the PREAMP BOARD
20	———	CM42706-00A	Shield Insulator	–	To be attached under the MOTHER BOARD
21-1	CLC02206-A-BFZ	CLC02206-B-BFZ	Zoom Lens	○	For GX-N7U/UT
22	———	CM31200-001	Shield Cover	–	Cover of PREAMP BOARD
23	———	CM31201-00A	Shield Case	–	Case of PREAMP BOARD
24	———	CM42691-00A	Shield Insulator	–	To be attached on the PREAMP BOARD
26	———	C41474-5	Tap Screw (×2)	–	For GX-N7U/UT securing the Lens Side cover
″	———	C41474-6	″	–	For GX-N4U/UT securing the Lens Side cover
28	CE40688-00A	CE40688-A0A	Def. Yoke	○	Part modification
30	———	CEX40365-001	Switch	–	To be contained with VTR SW BOARD
33	CJ39646-00A	CJ39625-A0B	LP Filter Ass'y	○	For GX-N7U/UT, Part modification
36	CE40687-00A	CE40687-C0A	SW Regulator	○	Part modification
41	CM10320-00A	CM10320-C0A	Chassis	○	Part modification
42	CM42434-001	CM42434-002	Mount Spring (×2)	○	″
45	CM31240-002	CM31240-A02	Grip Bracket	○	″
48	———	CM42780-001	Double Face (×2)	○	To be attached under the Zoom Knobs

View No.	Detail of change		Part Name	Interchange-ability	Remarks
	Previous	Present			
58	———	CM42795-A01	Blind Rubber	—	To be attached on the SW of MIC BOARD
59	———	CM4271-001	Top Insulator-F	—	To be attached between Chassis and Bracket
60	———	CM42883-002	Spacer	—	To be attached the MOTHER BOARD
64	SPSK2040R	SPSK2045M	Mini Screw	○	Part modification
65	C41632-4	C41632-5	Caution Label	○	〃
67	CM42452-001	CM42452-A01	Zoom Knob-T	○	〃
68	CM42453-001	CM42453-A01	Zoom Knob-W	○	
71-1	CM10335-001-M0	CM10335-A01-M0	Body Cover-L	○	Part modification
71-2	CM10335-003-M0	CM10335-A03-M0	〃	○	〃
77	CM42615-001	———	Hook Bracket (A)	—	Part modification
〃	———	CM42615-002	Hook Bracket (B)	—	
78	SPSH2060M	SPSH2050M	Mini Screw (×2)	○	Part modification
88	———	CM42746-001	Earth Foil (×2)	—	To be attached Body Cover-L, Body Cover-R
90-1	CM42620-001	CM42620-A01	Socket Holder	○	Part modification
90-2	CM42620-002	CM42620-A02	〃	○	〃
99	SPSH2060M	SPSH2050M	Mini Screw (×4)	○	〃
100	CM42613-001	CM42613-A01	Plate Nut T	○	〃
102-1	CM20540-001-M0	CM20540-A01-M0	Top & Rear Cover	○	〃
102-2	CM20540-002-M0	CM20540-A02-M0	〃	○	〃
103	SHSK2040M	SPSK2045M	Mini Screw (×4)	○	〃
104	SPSH2060M	———	〃 (×2)	—	Part deletion
104	———	A76382-A	Lug	—	Get between Body Cover-R and Plate Nut-S
106	CM31210-A01	CM31210-003	Grip Cover	○	Part modification
111	CM42445-A01	CM42687-001	Lens Lock Screw	○	〃
112	CM31245-001	CM31245-018	Name Plate	○	〃
〃	CM31245-002	CM31245-024	〃	○	〃
114	———	CM42688-001	Spring	—	With the lens Look Screw
115	SPSH2060M	SPSH2050M	Mini Screw (×2)	○	Part modification
116	CM42455-001	CM42455-A01	VTR SW Cap	○	〃

View No.	Detail of change		Part Name	Interchange-ability	Remarks
	Previous	Present			
120	———	CM42817-001	Top Insulator-R	–	To be attached on the MOTHER BOARD
121	C41777-2	C41777	UL Label	○	Part modification
126	CE40698-00A	CE40698-00D	Mic	○	〃 For GX-N7U/UT
〃	CE40705-00A	CE40705-00D	〃	○	〃 For GX-N4U/UT
132	C41708-2	C41708-3	Caution Label	○	〃
133	C40954-2	CM42752-002	〃	○	〃
134	———	CM42715-001	CRT Rubber	–	To be attached the EVF Cover (B)
135	———	CM42659-001	CRT Shade	–	〃
137	CE40679-00A	CE40679-A0A	DY Ass'y	○	Part modification
141	CM10324-001-M0	CM31308-00A-M0	EVF Bottom Ass'y	○	〃
142	CM42462-001	CM42811-A01	Light Guide	○	〃
143	CM42463-A01	CM42463-C01	Indicator Film	○	〃
145	———	CM42717-001	EVF Insulator	–	To be attached the EVF Bottom Ass'y
148	CM42465-A01	CM42465-003	Lock Knob	○	Part modification
149	CM42466-A01	CM42466-C01	Lock Spring	○	〃
151	———	CM42771-001	Label	–	To be attached back of the EVF Cover (T)
152	———	WLS2600	L Washer	–	With the EVF BOARD
161	⚠ CM31307-00A	⚠ CM31307-00B	Side Cover Ass'y	○	Part modification
162	———	CM42665-001	Label Indicator	–	Put on the Slide Cover Ass'y

■ PRINTED CIRCUIT BOARD PARTS LIST

1-1 DIFFERENCE BETWEEN CA-1071A AND CA-1071B/CA-1071C

(Note) CA-1071A board was replaced with CA-1071B board from July 1984 production lots.
Further, from October 1984 production lots, CA-1071B board was changed to CA-1071C board.
Interchangeability exist among these board.

View No.	CA-1071A	CA-1071B/C	Part Name	Interchangeability	Remarks
R1133	CE40412-104XYA	CE40412-104WYA	CH V R	○	
R1215	〃 -102WYA	〃 -101WYA	〃	○	
R1216	〃 -103WYA	———	〃	—	Part deletion
R1261	〃 -472XYA	CE40412-682XYA	〃	○	4.7kΩ→ 6.8kΩ
R1320	———	〃 -222XYA	〃	—	2.2kΩ
R1331	CE40412-471XYA	〃 -101XYA	〃	○	470Ω→100Ω
R1332	〃 -103XYA	〃 -472XYA	〃	○	10kΩ→4.7kΩ
R1109	QRS148J-822YL	QRS148J-182YL	CH MG R	○	8.2kΩ→1.8Ω
R1151	〃 -104YL	〃 -394YL	〃	○	100kΩ→390 kΩ
R1196	〃 -563YL	———	〃	—	Part deletion
R1201	〃 -104YL	QRS148J-105YL	〃	○	10kΩ→ 1MΩ
R1214	〃 -330YL	———	〃	—	Part deletion
R1217	〃 -221YL	———	〃	—	〃
R1232	〃 -272YL	———	〃	—	〃
R1247	〃 -681YL	QRS148J-181YL	〃	○	680Ω→180Ω
R1248	〃 -681YL	〃 -820YL	〃	○	680Ω→82Ω
R1262	〃 -333YL	〃 -272YL	〃	○	33kΩ→2.7kΩ
R1275	———	〃 -561YL	〃	—	560Ω, 1/4W, J
R1276	———	〃 -104YL	〃	—	100kΩ, 〃 〃
R1277	———	QRS141F-1005	MG R	—	1MΩ, 〃 F
T1281	———	QRD161J-150	C R	—	15Ω 1/6W, J
R1283	———	〃 -104	〃	—	100kΩ, 〃 〃
R1306	QRS148J-102YL	———	CH MG R	—	Part deletion
R1318	———	QRS148J-391YL	〃	—	390Ω, 1/4W, J
R1321	QRS148J-154YL	〃 -333YL	〃	○	150kΩ→33kΩ
R1324	〃 -272YL	〃 -821YL	〃	○	2.7kΩ→820Ω
R1350	———	〃 -181Y	〃	—	180Ω, 1/4W, J
R1360	———	〃 -105YL	〃	—	1MΩ, 〃 〃
C1254	———	QCS81HJ-120YLA	CH C Cap.	—	12pF, 50V, J
C1263	———	QCY32HK-272AZ	〃	—	2700pF, 500V, A
C1301	QEV41AM-227M	QETA1AM-477	E Cap	○	220μF→470μF
C1307	QCS81HJZ-331YLA	QCS81HJ-821YLA	CH C Cap.	○	330pF→820pF
C1310	———	QFM72DJ-222M	M Cap.	—	2200pF, 200V, J
C1313	QEE41CK-476M	QEE51CK-226B	Tan. Cap.	○	47μF→22μF
C1319	QET41CR-106	QER40JM-107M	E Cap.	○	10μF→100μF
C1320	———	QCY81HK-473YLA	CH C Cap.	—	0.047μF, 50V, J
C1322	QCS11HJ-470	QCS81HJ-470YLA	〃	×	47pF 〃 〃
L1301	A4948-101U	A49468-201U	Peaking Coil	○	100μH→200μH
D1263	MA4120(H)	MA3120(L,H)	Chip Zener Diode	×	Zener Diode→Chip Zener Diode
D1264	〃	〃	〃	×	〃
D1265	〃	———	Zener Diode	—	Part deletion
D1266	〃	MA3120(L,H)	Chip Zener Diode	×	Zener Diode→Chip Zener Diode
D1267	〃	〃	〃	×	〃
D1304	———	1S2473H	Si Diode	—	Part addition
IC1202	TC4013BG	MN4013BS	IC	○	Part modification

1-2 DIFFERENCE BETWEEN CA-1071B/CA-1071C AND CA-1073B

View No.	CA-1071B/C	CA-1073B	Part Name	Interchange-ability	Remarks
R1231	QRS148J-102YL	———	CH MG R	—	Part deletion
R1233	″ -153YL	———	″	—	″
R1275	″ -561YL	———	″	—	″
R1276	″ -104YL	———	″	—	″
R1277	QRS141F-1005	———	MG R	—	″
Q1231	2SB709(P-R)	———	Chip Transistor	—	″
D1231	MA151WA	———	Chip Diode	—	″
SW1231	CEX40306-002	———	Push Switch	—	″
SW1301	″ -002	———	″	—	″
SW1302	″ -002	———	″	—	″

2. DIFFERENCE BETWEEN CA-A001A AND CA-A003A/CA-A005A

(Note) CA-A001A board was replaced with CA-A003A board from July 1984 production lots.
Further, from October 1984 production lots, CA-A003A board was changed to CA-A005A board.
No interchangeability exist among these board.

View No.	CA-A001A	CA-A003/5A	Part Name	Interchange-ability	Remarks
RA001	QRSA08J-103YL	———	CH MG R	—	Part deletion
RA003	″ -273YL	QRSA08J-393YL	″	○	27kΩ→39kΩ
RA006	″ -102YL	———	″	—	Part deletion
RA007	″ -222YL	QRSA08J-182YL	″	○	2.2kΩ→1.8kΩ
RA008	———	QRS148J-472YL	″	—	4.7kΩ, 1/4W, J
RA011	QRSA08J-103YL	———	″	—	Part deletion
RA013	″ -273YL	QRSA08J-393YL	″	○	27kΩ→39kΩ
RA017	″ -222YL	″ -182YL	″	○	2.2kΩ→1.8kΩ
RA018	———	QRS148J-472YL	″	—	4.7kΩ, 1/4W, J
RA031	QRSA08J-334YL	QRSA08J-224YL	″	○	33kΩ→22kΩ
RA033	QRS148J-470YL	———	″	—	Part deletion
CA002	CE40622-106YM	QEE41AK-226B	Tan. Cap.	○	CH AL E Cap.→Tan. Cap. 10μF, 50V→22μF, 16V
CA004	QCF81HZ-473YLS	QCF81HZ-472YLS	CH C Cap.	○	0.047μF→4700pF
CA005	CE40034-685WM	CE40622-106YM	CH AL E Cap.	○	CH Tan. E. Cap.→CH AL E Cap. 6.8μF→10μF
CA012	CE40622-106YM	QEE41AK-226B	Tan. Cap.	○	CH AL E Cap.→Tan. Cap. 10μF, 50V→22μF, 16V
CA014	QCF81HZ-473YLS	QCF81HZ-472YLS	CH C Cap.	○	0.047μF→4700pF
DA002	1S2473H	MA157	Chip Diode	×	Si Diode→Chip Diode
DA003	″	———	″	—	Part deletion

3. DIFFERENCE BETWEEN CA-A002A AND CA-A004A

(Note) CA-A002A board was replaced with CA-A004A board from July 1984 production lots.
No interchangeability exists between CA-A002A board and CA-A004A board.

View No.	CA-A002A	CA-A004A	Part Name	Interchange-ability	Remarks
RA001	QRSA08J-103YL	———	CH MG R	—	Part deletion
RA002	〃 -101YL	QRSA08J-181YL	〃	○	100Ω→180Ω
RA003	〃 -223YL	〃 -683YL	〃	○	22kΩ→68kΩ
RA008	———	QRS148J-472YL	〃	—	4.7kΩ, 1/4W, J
RA031	QRSA08J-334YL	QRSA08J-473YL	〃		330kΩ→47kΩ
RA033	QRS148J-470YL	———	〃	—	Part deletion
CA002	CE40622-106YM	QEE41CK-106B	Tan. Cap.	○	CH AL E Cap.→Tan. Cap. 50V→16V
CA004	QCY81HK-103YLS	QCY81HK-332YLS	CH C Cap.	○	0.01μ→3300pF
CA005	CE40034-685WM	CE40622-106YM	CH AL E Cap.	○	CH Tan. E Cap.→CH AL E Cap. 6.8μF→10μF
CA006	CE40621-226YM	QER40JM-476M	E Cap.	○	CH AL E Cap.→E Cap. 22μF, 50V→47μF, 6.3V
DA002	———	MA157	Chip Diode	—	Part addition

4. CA-B001A PREPROCESS BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
RB001	QRS148J-471YL	———	CH MG R	—	Part deletion
RB016	〃 -101YL	———	〃	—	〃
CB003	CE40034-685XM	CE40622-106YM	CH AL E Cap.	○	CH Tan. E Cap.→CH AL E Cap. 6.8μF, 6.3V→10μF, 50V
CB014	———	QCS81HJ-100YLA	CH C Cap.	—	10pF, 50V, J
CB015	———	QCS81HZ-473YLA	〃	—	0.047μF, 〃 Z
QB004	2SB709(P-R)	2SC2778(B,C)	Chip Transistor	×	Part modification
QB005	———	2SB709(P-R)	〃	—	Part addition

5. CA-C001A CARRIER MATRIX BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
RC024	CE40684-222YA	CE40684-103YA	CH V R	○	2.2kΩ→10kΩ
RC002	QRSA08J-561YL	QRSA08J-471YL	CH MG R	○	560Ω→470Ω
RC003	QRS148J-182YL	〃 -182YL	〃	×	1/4W→1/10W
RC004	〃 -562YL	〃 -562YL	〃	×	〃
RC005	〃 -121YL	〃 -121YL	〃	×	〃
RC007	〃 -821YL	〃 -821YL	〃	×	〃
RC010	QRS08J-183YL	QRS148J-183YL	〃	×	1/10W→1/4W
RC013	〃 -271YL	〃 -271YL	〃	×	〃
RC017	A74100-150	———	Thermistor	—	Part deletion
RC020	———	QRS148J-182YL	CH MG R	—	1.8kΩ, 1/4W, J
RC023	QRS148J-562YL	———	〃	—	Part deletion
RC025	QRD181J-392A	———	C R	—	〃
RC027	QRD181J-682A	———	〃	—	〃
RC028	〃 -472A	———	〃	—	〃
RC032	———	ERT-D2FFK251S	Thermistor	—	250Ω
RC033	———	QRSA08J-221YL	CH MG R	—	220Ω, 1/10W, J
RC034	———	QRD161J-154Y	C R	—	150kΩ, 1/6W, J
CC012	QCS81HJ-7R0YLA	———	CH C Cap.	—	Part deletion
CC016	———	QCS81HJ-101YLS	〃	—	100pF, 50V, J
CC017	———	〃 -390YLA	〃	—	39pF, 〃 〃
CC018	———	〃 -150YLA	〃	—	15pF, 〃 〃
TC001	CE40655-A0A	CE40655-B0A	Phase Transf	○	Part modification

6. CA-D001A DETECTOR BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
RD034	———	QRS148J-100YL	CH MG R	—	10Ω, 1/4W, J
CD004	QCS81HJ-101YLA	QCS81HJ-820YLA	CH C Cap.	○	100pF→82pF
CD018	CE40621-226YM	QEPA1CM-106M	BP E Cap.	○	CH AL E Cap.→BP E Cap. 22μF→10μF
CD019	〃 -226YM	〃 -106M	〃	○	〃

7. DIFFERENCE BETWEEN CA-E001A AND CA-E004A/CA-E005A

(Note) CA-E001A board was replaced with CA-E004A board from July 1984 production lots.
Further, from October 1984 production lots, CA-E004A board was changed to CA-E005A board.
No interchangeability exist among these board.

View No.	CA-E001A	CA-E004A/5A	Part Name	Interchange-ability	Remarks
RE013	QRS148J-223YL	QRS148J-183YL	CH MG R	○	22Ω→18kΩ
RE022	QRD181J-472A	QRS148J-472YL	〃	○	CR→CH MG R 1/8W→1/4W
RE023	QRS148J472YL	———	〃	—	Part deletion
RE033	———	QRSA08J-223YL	〃	—	22kΩ, 1/10W, J
RE034	———	〃 -104YL	〃	—	100kΩ, 〃 〃
RE037	QRD161J-154	〃 -154YL	〃	○	CR→CH MG R 1/6W→1/10W
RE039	QRD181J-683A	〃 -563YL	〃	○	CR→CH MG R 1/8W→1/10W

View No.	CA-E001A	CA-E004/5A	Part Name	Interchange-ability	Remarks
RE040	QRD181J-273A	QRSA08J-333YL	CH MG R	○	CR→CH MG R 27kΩ, 1/8W→ßßkΩ, 1/10W
RE044	———	QRD181J-122A	C R	—	1.2kΩ, 1/8W, J
RE045	———	A75575-332	Thermistor	—	3.3kΩ
RE052	———	QRD161J-224	C R	—	220kΩ, 1/6W, J
CE009	CE40034-685XM	CE40622-106YM	CH AL E Cap.	○	CH Tan E Cap.→CH AL E Cap. 6.8μ,F 6.3V→10μF, 16V
CE010	〃 -685XM	〃 -106YM	〃	○	〃
CE012	QCY81HK-822YLS	QCS81HJ-471YLS	CH C Cap.	○	8200PF, K→470pF, J
CE013	〃 -822YLS	〃 -471YLS	〃	○	〃
DE003	———	MA151A	Chip Diode	—	Part addition

8. CA-E003A BLACK SET/AUTO WHITE BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
RE013	QRS148J-223YL	QRS148J-183YL	CH MG R	○	22kΩ→18kΩ
RE033	———	QRSA08J-223YL	〃	—	22kΩ, 1/10W, J
RE034	———	〃 -104YL	〃	—	100kΩ, 〃 〃
RE037	QRD161J-154	〃 -154YL	〃	○	CR→CH MG R, 1/6W→1/10W
RE052	———	QRD161J-224	C R	—	220kΩ, 1/6W, J
CE002	QCT81CH-221YLS	QCT81CH-181YLS	CH C Cap.	○	220pF→180pF
CE009	CE40034-685XM	CE40622-106YM	CH AL E Cap.	×	CH Tan E Cap.→CH AL E Cap. 6.8μF, 6.3V→10μF,16V
CE010	〃 -685XM	〃 -106YM	〃	×	〃
CE016	QCS81HJ-120YLS	———	CH C Cap.	—	Part deletion

9. CA-F001A COLOR GAMMA BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
RF001	QRSA08J-273YL	QRSA08J-223YL	CH MG R	○	27kΩ→22kΩ
RF002	QRS148J-393YL	QRS148J-332YL	〃	○	39kΩ→33kΩ
RF019	〃 -473YL	〃 -683YL	〃	○	47kΩ→68kΩ
RF029	QRSA08J-823YL	QRSA08J-104YL	〃	○	82kΩ→100kΩ
RF033	〃 -272YL	QRS148J-272YL	〃	×	1/10W→1/4W
RF034	〃 -182YL	〃 -182YL	〃	×	〃
RF037	———	〃 -223YL	〃	—	22kΩ, 1/4W, J
RF038	———	〃 -183YL	〃	—	18kΩ, 〃 〃
RF039	———	QRD181J-822A	C R	—	8.2kΩ, 1/8W, 〃

GX-N7U/UT GX-N4U/UT Modified One

STANDARD CIRCUIT DIAGRAM

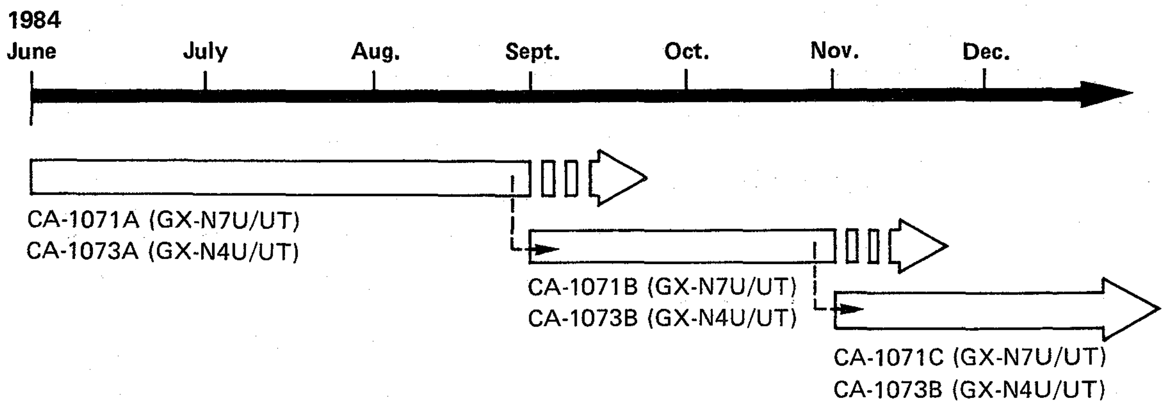
CONTENTS

1. CHANGES ON PRESENTLY USED PC BOARDS 2
2. NOTES ON USING CIRCUIT DIAGRAMS 6
3. PIN ARRANGEMENTS OF ICs, TRANSISTORS AND DIODES 7
4. WIRING DIAGRAM 9
5. BLOCK DIAGRAM OF EVF 11
6. BLOCK DIAGRAM OF LENS (GX-N7U/UT) 12
7. BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N7U/UT) 13
8-1. CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N7U/UT)(CA-1071B/C) 15
8-2. BOARD DIAGRAM OF MOTHER BOARD (CA-1071B/C) 17
9-1. CIRCUIT DIAGRAM OF PRE-AMP (CA-2071A) 19
9-2. BOARD DIAGRAM OF PRE-AMP (CA-2071A) 19
10-1. CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ (CA-A003A/A005A) 20
10-2. BOARD DIAGRAM OF AUDIO BOARD Ⓐ (CA-A003A/A005A) 20
11-1. CIRCUIT DIAGRAM OF PRE-PROCESS BOARD Ⓑ (CA-B001A) 21
11-2. BOARD DIAGRAM OF PRE-PROCESS BOARD Ⓑ (CA-B001A) 21
12-1. CIRCUIT DIAGRAM OF CARRIER MATRIX BOARD Ⓒ (CA-C001A) 22
12-2. BOARD DIAGRAM OF CARRIER MATRIX BOARD Ⓒ (CA-C001A) 22
13-1. CIRCUIT DIAGRAM OF DETECTOR BOARD Ⓓ (CA-D001A) 23
13-2. BOARD DIAGRAM OF DETECTOR BOARD Ⓓ (CA-D001A) 23
14-1. CIRCUIT DIAGRAM OF BLACK SET/AUDIO WHITE BOARD Ⓔ (CA-E004A/E005A) 24
14-2. BOARD DIAGRAM OF BLACK SET/AUTO WHITE BOARD Ⓔ (CA-E004A/E005A) 24
15-1. CIRCUIT DIAGRAM OF COLOR γ BOARD Ⓕ (CA-F001A) 25
15-2. BOARD DIAGRAM OF COLOR γ BOARD Ⓕ (CA-F001A) 25
16-1. CIRCUIT DIAGRAM OF CDP BOARD Ⓖ (CA-G001A) 26
16-2. BOARD DIAGRAM OF CDP BOARD Ⓖ (CA-G001A) 26
17-1. CIRCUIT DIAGRAM OF AGC BOARD Ⓗ (CA-H001A) 27
17-2. BOARD DIAGRAM OF AGC BOARD Ⓗ (CA-H001A) 27
18-1. CIRCUIT DIAGRAM OF ENCODER BOARD Ⓙ (CA-J003A) 28
18-2. BOARD DIAGRAM OF ENCODER BOARD Ⓙ (CA-J003A) 28
19-1. CIRCUIT DIAGRAM OF SSG BOARD Ⓚ (CA-K001A) 29
19-2. BOARD DIAGRAM OF SSG BOARD Ⓚ (CA-K001A) 29
20-1. CIRCUIT DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ (CA-L003A) 30
20-2. BOARD DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ (CA-L003A) 30
21. CIRCUIT DIAGRAM OF SW. REGULATOR (CE40687) 31
22. BOARD DIAGRAM OF MIC BOARD (CA-M003A) 32
23. BOARD DIAGRAM OF TUBE SOCKET BOARD 32
24. BOARD DIAGRAM OF BIAS LIGHT BOARD (CA-8071A) 32
25-1. CIRCUIT DIAGRAM OF EVF (CA-6071A) 33
25-2. BOARD DIAGRAM OF EVF (CA-6071A) 34
26. CIRCUIT DIAGRAM OF GX-N4U/UT 35
27. BOARD DIAGRAM OF MIC BOARD (CA-M004A) 36
28. BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N4U/UT) 37
29-1. CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N4U/UT) (CA-1073B) 39
29-2. BOARD DIAGRAM OF MOTHER BOARD (CA-1073B) 41
30-1. CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ (CA-A004A) 43
30-2. BOARD DIAGRAM OF AUDIO BOARD Ⓐ (CA-A004A) 43
31-1. CIRCUIT DIAGRAM OF BLACK SET BOARD Ⓔ (CA-E003A) 44
31-2. BOARD DIAGRAM OF BLACK SET BOARD Ⓔ (CA-E003A) 44

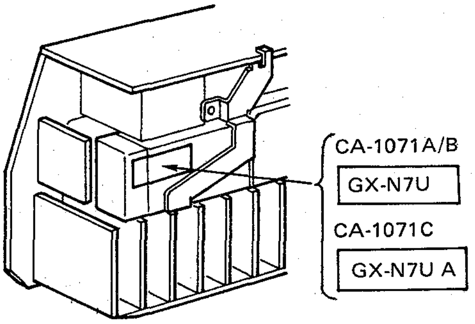
GX-N7U/UT : No. 5506B
GX-N4U/UT : No. 5519B
Nov. 1984

1. CHANGES ON PRESENTLY USED PC BOARDS

1. During the course of production, certain PC boards employed on the device have been changed. Particularly exercise care as to these changes when conducting post-sales service work.


1984
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
CA-1071A (GX-N7U/UT)
CA-1073A (GX-N4U/UT)
CA-1071B (GX-N7U/UT)
CA-1073B (GX-N4U/UT)
CA-1071C (GX-N7U/UT)
CA-1073B (GX-N4U/UT)

2. Outline of Changes

Board No.	**CA-1071A/1073A → CA-1071B/1073B**	**CA-1071B → CA-1071C**
Change	Use of certain parts was shifted among a portion of module boards, resulting in changes of a part of circuits.	While the circuit structure remains the same, the connection method was changed among certain module boards. (GX-N7U/UT Only)
Discrimination method	Confirm the PC board numbers.	 CA-1071A/B GX-N7U CA-1071C GX-N7U A

- **Module Boards Employed (GX-N7U/UT)**

Board name	CA-1071A	CA-1071B	CA-1071C	Interchangeability
Mother board	CA-1071A	CA-1071B	CA-1071C	○ (*)
Audio	CA-A001A	CA-A003A	CA-A005A	X
Pre-process	CA-B001A	←	←	○
Carrier matrix	CA-C001A	←	←	○
Detector	CA-D001A	←	←	○
Black set / Auto white	CA-E001A	CA-E004A	CA-E005A	X
Color γ	CA-F001A	←	←	○
CDP	CA-G001A	←	←	○
AGC	CA-H001A	←	←	○
Encoder	CA-J001A	CA-J003A	←	X
SSG	CA-K001A	←	←	○
VTR trig. / Batt. Alarm	CA-L001A	CA-L003A	←	X
MIC	CA-M001A	CA-M003A	←	X

(*) CA-1071 includes all PC boards A through M.

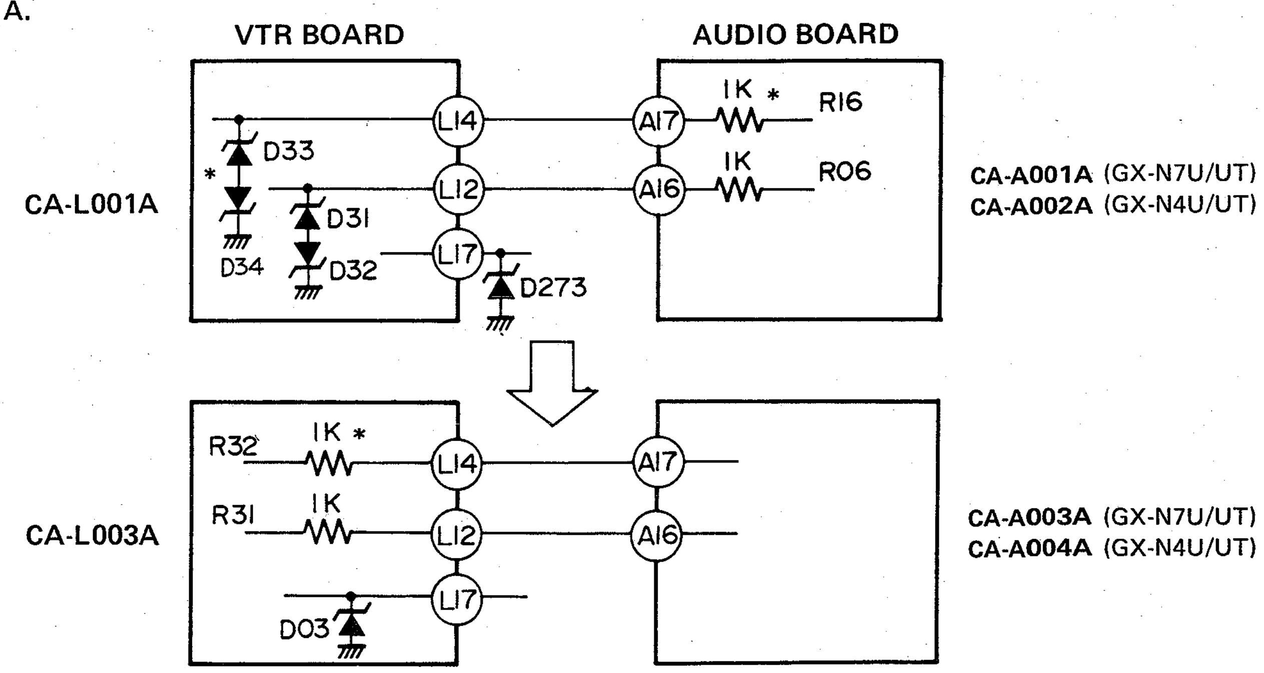
(GX-N4U/UT)

Board name	CA-1073A	CA-1073B	Interchangeability
Mother board	CA-1073A	CA-1073B	○ (*)
Audio	CA-A002A	CA-A004A	X
Pre-process	CA-B001A	←	○
Carrier matrix	CA-C001A	←	○
Detector	CA-D001A	←	○
Black set	CA-E003A	←	○
Color γ	CA-F001A	←	○
CDP	CA-G001A	←	○
AGC	CA-H001A	←	○
Encoder	CA-J001A	CA-J003A	X
SSG	CA-K001A	←	○
VTR trigger / Batt. Alarm	CA-L001A	CA-L003A	X
MIC	CA-M002A	CA-M004A	X

(*) CA-1073 includes all PC boards A through M.

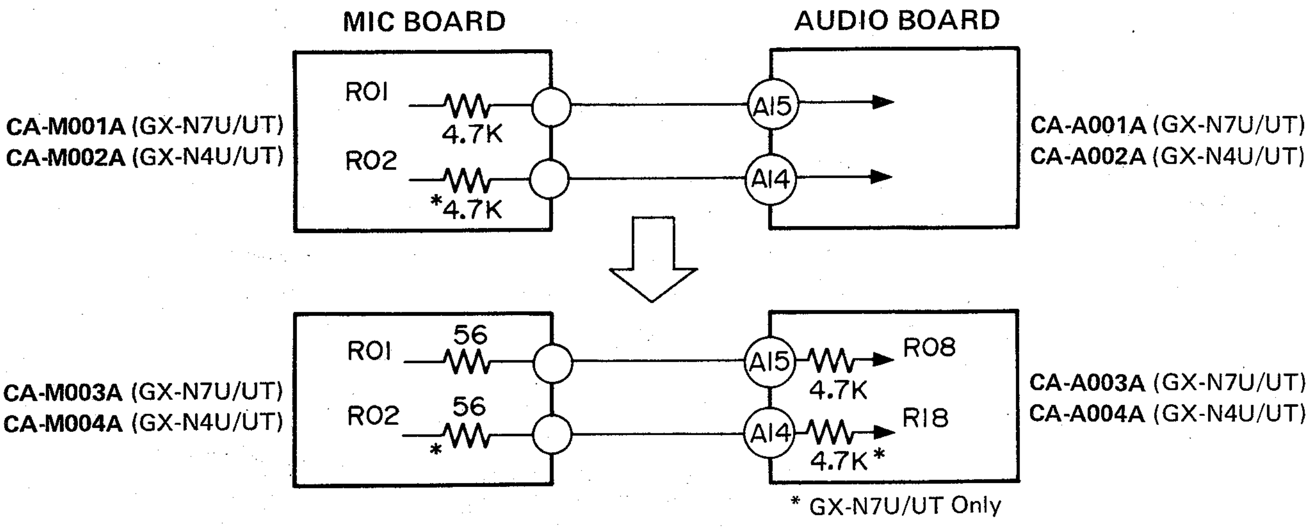
3. Changes from CA-1071A/1073A to CA-1071B/1073B

A.

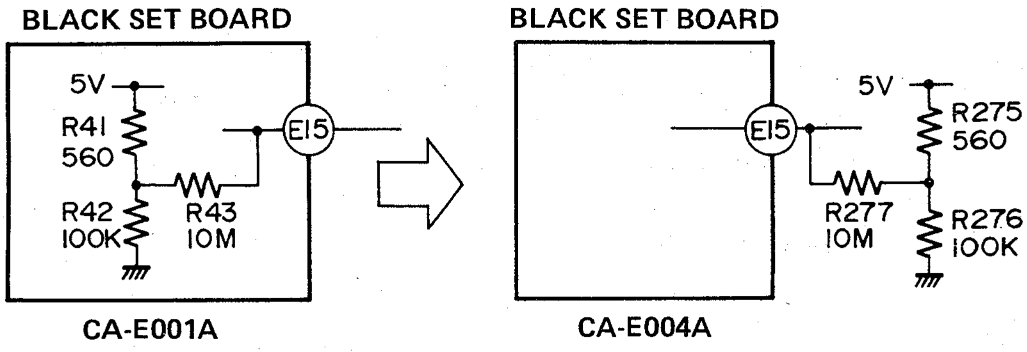

VTR BOARD
AUDIO BOARD
CA-L001A
D33
*
D34
D31
D32
L14
L12
L17
D273
A17
A16
1K *
R16
1K
R06
CA-A001A (GX-N7U/UT)
CA-A002A (GX-N4U/UT)
CA-L003A
R32
1K *
R31
1K
D03
L14
L12
L17
A17
A16
CA-A003A (GX-N7U/UT)
CA-A004A (GX-N4U/UT)

*: GX-N7U/UT Only

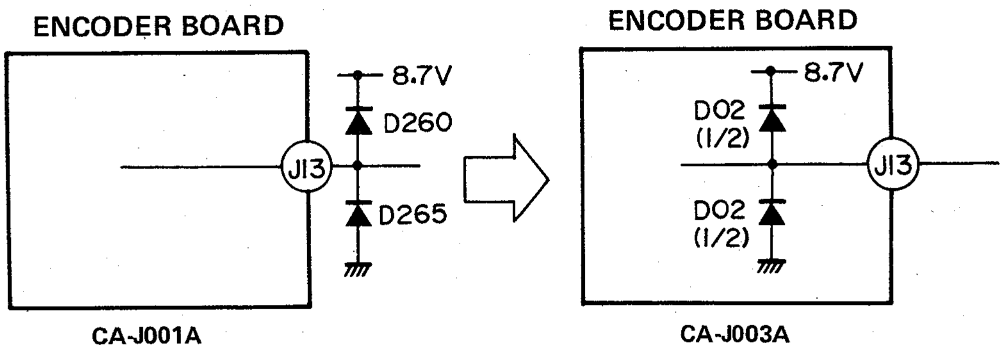
B.


MIC BOARD
AUDIO BOARD
CA-M001A (GX-N7U/UT)
CA-M002A (GX-N4U/UT)
R01
4.7K
R02
*4.7K
A15
A14
CA-A001A (GX-N7U/UT)
CA-A002A (GX-N4U/UT)
CA-M003A (GX-N7U/UT)
CA-M004A (GX-N4U/UT)
R01
56
R02
56
*
A15
4.7K
R08
A14
4.7K*
R18
CA-A003A (GX-N7U/UT)
CA-A004A (GX-N4U/UT)
* GX-N7U/UT Only

C.

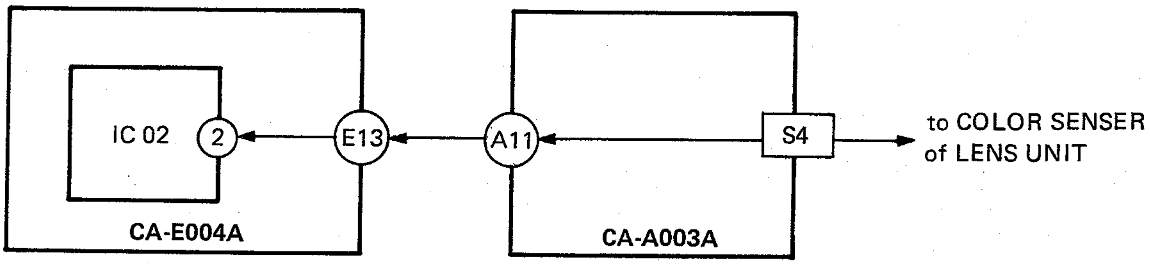

BLACK SET BOARD
5V
R41
560
R42
100K
R43
10M
E15
CA-E001A
BLACK SET BOARD
E15
5V
R275
560
R277
10M
R276
100K
CA-E004A

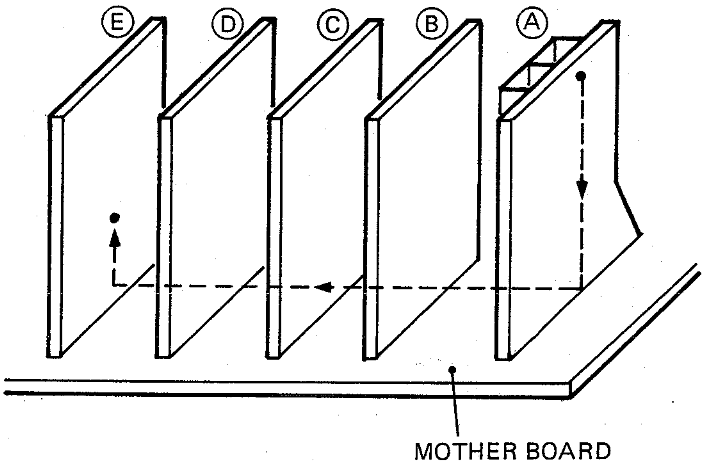
D.


ENCODER BOARD
J13
8.7V
D260
D265
CA-J001A
ENCODER BOARD
8.7V
D02
(1/2)
D02
(1/2)
J13
CA-J003A

4. Changes from CA-1071B to CA-1071C

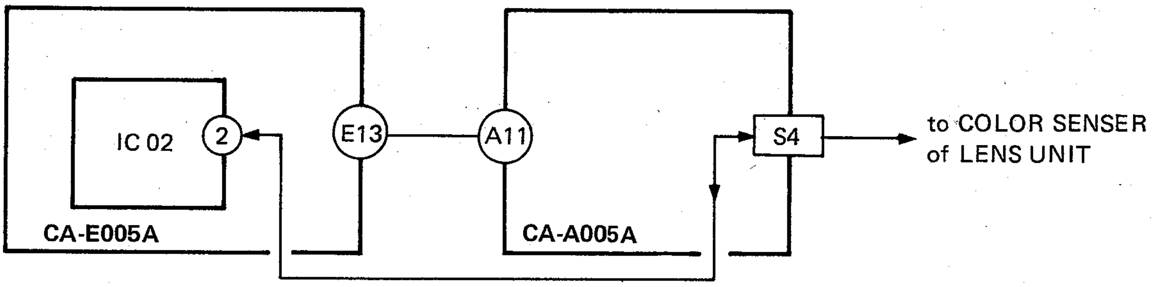
A. CA-1071B

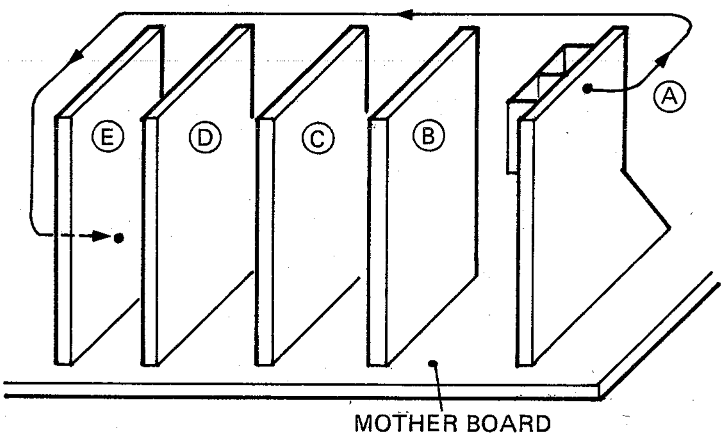

IC 02
2
E13
A11
S4
to COLOR SENSER of LENS UNIT
CA-E004A
CA-A003A


Ⓔ
Ⓓ
Ⓒ
Ⓑ
Ⓐ
MOTHER BOARD

- Connected by way of the mother board pattern.

B. CA-1071C


IC 02
2
E13
A11
S4
to COLOR SENSER of LENS UNIT
CA-E005A
CA-A005A


Ⓔ
Ⓓ
Ⓒ
Ⓑ
Ⓐ
MOTHER BOARD

- Directly connected with wire.

2 NOTES ON USING THIS CIRCUIT DIAGRAMS

1. Since the circuit diagram is a standard one, the circuit and circuit constants may be object to change for improvement without any notice.
2. Replacing the shaded (▨) parts in the circuit diagram, be sure to use parts specified to safety purposes.
3. The voltage values and waveforms have been measured under the following conditions:
   - Illumination : Illumination condition during adjustment
   - Object : JVC Gray scale pattern ($\gamma = 2.2$, 11 steps)
   - Iris : Iris switch ~ Auto iris (AGC ON) " Ⓐ ", iris compensation switch ~ "O" position
   - VTR mode indication : Pause mode
   - White balance : Indoor setting
   - Voltage values : All DC voltage values. Measured by a high-precision tester or digital voltmeter.
   - Waveforms : Oscilloscope sweep time H: 10 μS/div. V: 5 mS/div. Others: Measured time is shown. Usually a probe of 10 : 1 is used. (Indicated when a 1 : 1 probe is used.)

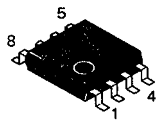
   * **Note:** See also the information given in the circuit diagram.
4. Indications on the circuit diagram.
   - Resistors
     10K: Resistance value
     non-unit: [Ω]
     K: [KΩ]
     M: [MΩ]
     1/2W: Rated allowable power [W]
     non-indication: 1/4 chip resistor or carbon resistor
   - Electrolytic Capacitors
     47/16: Capacitance value [μF] working voltage [V]
     NP/BP: Non-polar/bipolar electrolytic capacitor
     T or TAN: Tantalum capacitor
   - Capacitors
     0.033: Capacitance value
     1 or higher: [pF], less than 1 : [μF]
     100V: working voltage
     All DC voltage except for AC indicated.
     non-indication: 50V DC
     MY: Mylar capacitor
     PP: Polypropylene capacitor
     non-indication: Ceramic capacitor
   - Coils
     39 : Inductance value
     non-unit: [μH]
   - Connections
     □□ : Connector
     △ or -≫- : Chip connector
     ○ : Soldering

   * Refer to the parts list in the Service manual about the detailed indications of parts.
5. The non-indicated chip transistor and chip diode on the Circuit Diagrams are as follows.
   - PNP type : 2SB709 (Q, R)
   - NPN type : 2SC2778 (C, D)
   - Diode : MA151WA

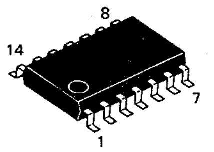
Interchangeable parts	Supplied parts
SB709, 709 (P-R), 709 (Q-R)	2SB709 (Q, R)
2SC2778, 2778 (B, C), 2778 (C, D)	2SC2778 (C, D)
2SD601, 601 (Q, R)	2SD601 (Q, R)
2SD601A, 601A (Q, R)	2SD601 (Q, R)

6. It is possible than the wiring diagram is inconsistent with the actual connection because of certain design improvements, etc. The diagram, therefore, should be used only for reference.
7. Color of P.C.B. pattern.
   ░ Red color shows top side pattern of PC BOARD.
   ▓ Gray color shows bottom side pattern of PC BOARD.
8. **This circuit diagram is prepared primarily centered around GX-N7U/UT. As to GX-N4U/UT, only those points that differ from this diagram are described in the second parts of the Operation Manual. For details, refer to page 35 and thereafter.**

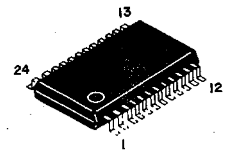
3 PIN ARRANGEMENTS OF ICs, TRANSISTORS AND DIODES



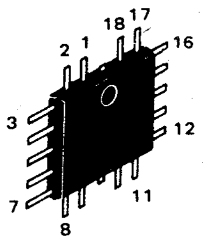
MN8029S (8 pin)
NJM082M (8 pin)
μPC4558G (8 pin)



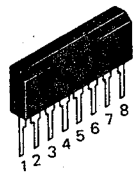
μPC4741G(14 pin)
μPD4013BG (14 pin)
TC4013BG (14 pin)
M51545P (16 pin)



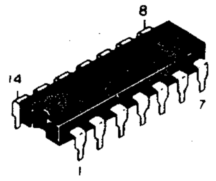
BA7020F (22 pin)
M51261P (20 pin)
M51262P (22 pin)
M51263P (24 pin)
AN2510S (24 pin)
M51264P (28 pin)


18
17
2
1
16
3
12
11
7
8

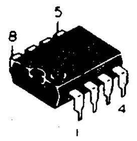
HA11720MP (18 pin)
HA11748B (28 pin)



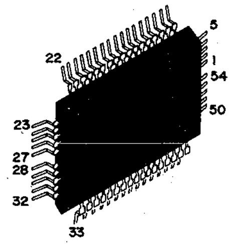
N5232L (8 pin)



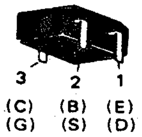
SN76670 (N) (14 pin)



NJM3414D (8 pin)

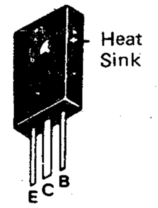

5
22
1
54
50
23
27
28
32
33

HD61907 (54 pin)

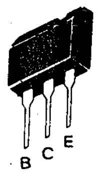


CHIP TRANSISTOR

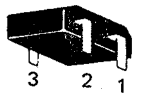
2SA1022 (C)
2SA1022 (B,C)
2SB709 (Q,R)
2SB709 (P-R)
2SB792 (Q-T)
2SB970 (Q-S)
2SC2404 (D)
2SC2405 (R-T)
2SC2778 (C,D)
2SC2778 (B,C)
2SD601 (QR)
2SD601A (QR)
2SD1030 (R)
CHIP FET
2SK316 (Q)


Heat
Sink
E
C
B

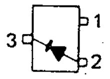
2SD781
2SD975



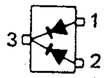
2SB788(T)



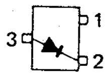
CHIP DIODE



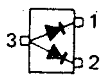
MA151K



MA151WK
MA157

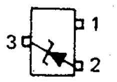


MA151A

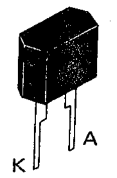


MA151WA

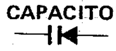
CHIP ZENER DIODE



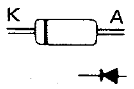
MA3062
MA3075
MA3051
MA3120
MA3047-L



VARIABLE CAPACITOR

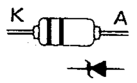


KV-1236XY



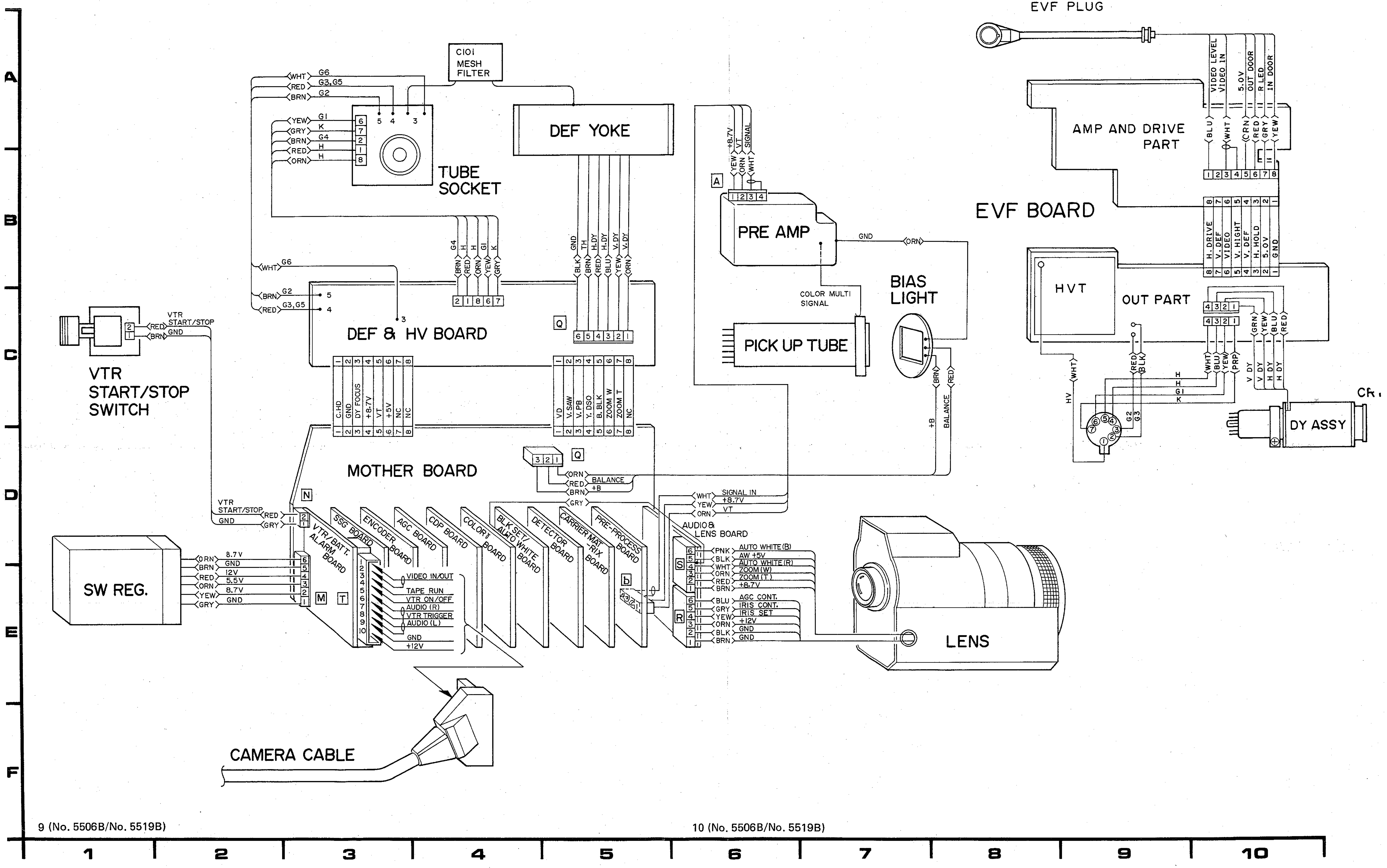
VERIABLE CAPACITOR DIODE
ISV68

DIODE
W06A
IS2473H

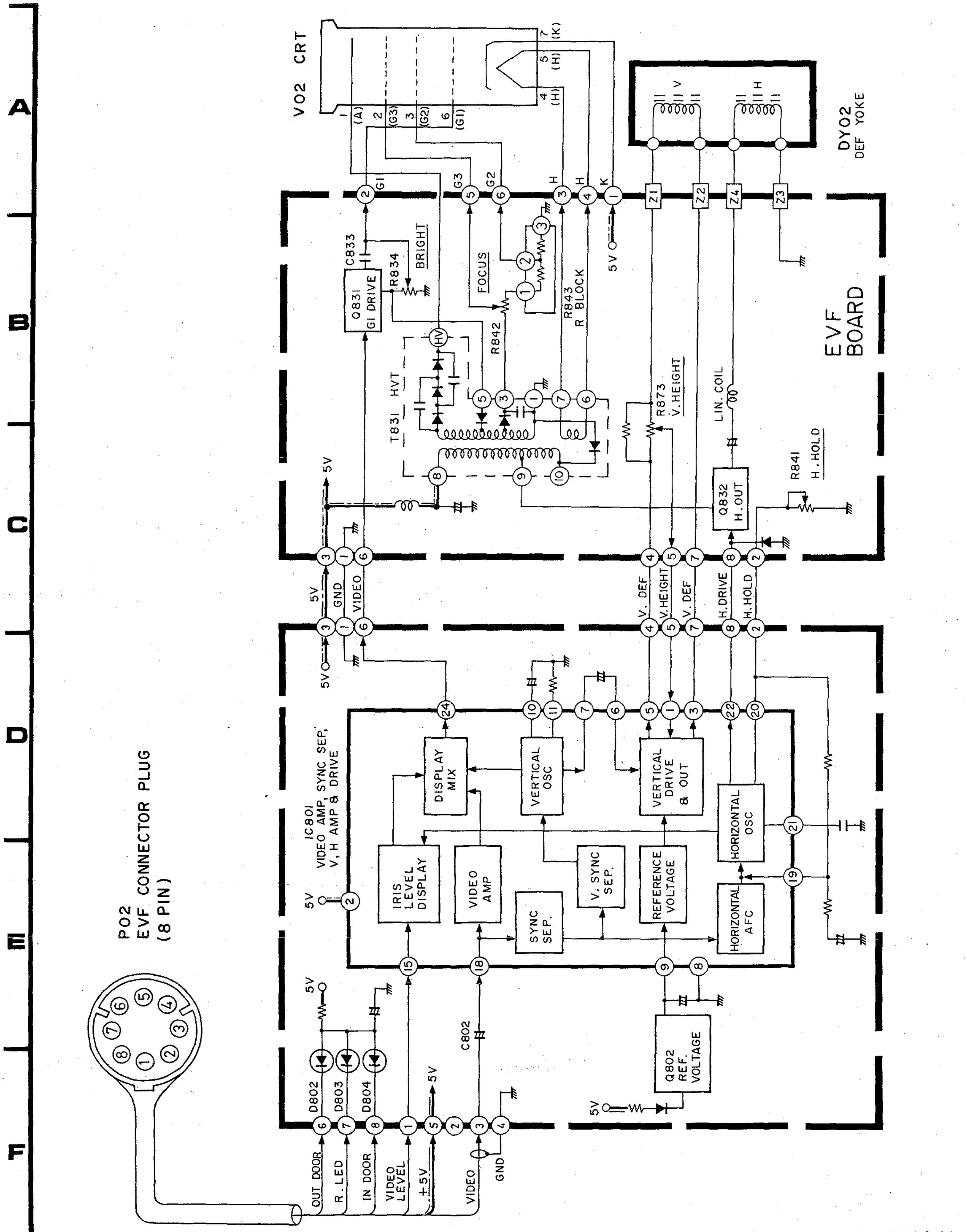


ZENER DIODE
MA4120

4 WIRING DIAGRAM

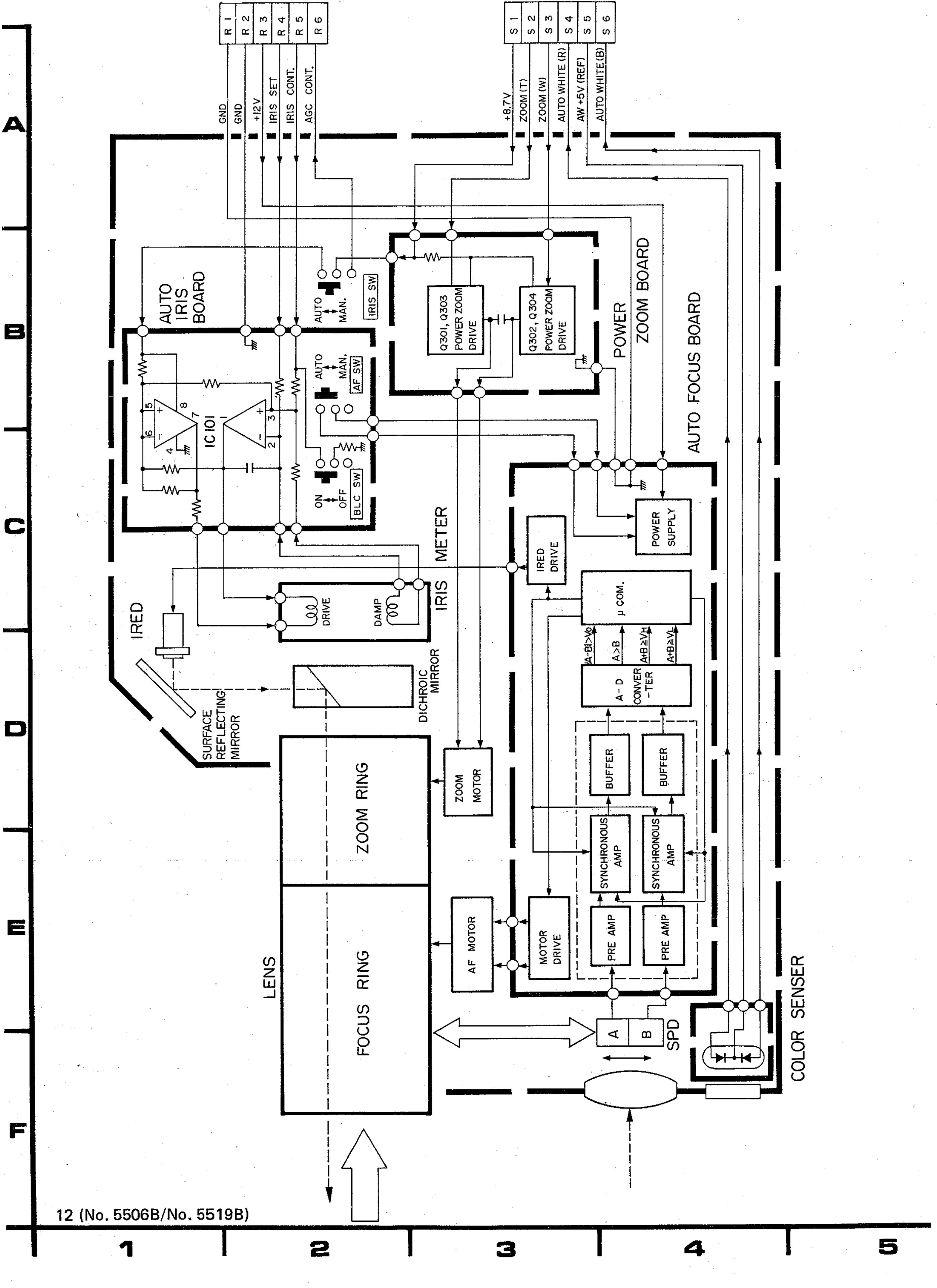

A
B
C
D
E
F
C101 MESH FILTER
DEF YOKE
TUBE SOCKET
WHT G6
RED G3, G5
BRN G2
YEW G1
GRY K
BRN G4
RED H
ORN H
6 5 4 3
G4 H H G1 K
BRN RED ORN YEW GRY
2 1 8 6 7
WHT G6
BRN G2 5
RED G3, G5 4
3
DEF & HV BOARD
GND TH H.DY H.DY V.DY V.DY
BLK BRN RED BLU YEW ORN
Q
6 5 4 3 2 1
C.HD GND DY FOCUS +8.7V VT +5V NC NC
VD V.SAW V.PB Y.DSO B.BLK ZOOM W ZOOM T NC
1 2 3 4 5 6 7 8
VTR START/STOP
RED
BRN GND
VTR START/STOP SWITCH
MOTHER BOARD
3 2 1
Q
ORN BALANCE
RED +B
BRN
GRY
N
VTR START/STOP RED
GND GRY
SW REG.
ORN 8.7V
BRN GND
RED 12V
ORN 5.5V
YEW 8.7V
GRY GND
M
T
VTR/BATT. ALARM BOARD
SSG BOARD
ENCODER BOARD
AGC BOARD
CDP BOARD
COLOR BOARD
BLK SET/AUTO WHITE BOARD
DETECTOR BOARD
CARRIER MAT-RIX BOARD
PRE-PROCESS BOARD
b
VIDEO IN/OUT
TAPE RUN
VTR ON/OFF
AUDIO (R)
VTR TRIGGER
AUDIO (L)
GND
+12V
CAMERA CABLE
WHT SIGNAL IN
YEW +8.7V
ORN VT
AUDIO & LENS BOARD
S
PNK AUTO WHITE (B)
BLK AW +5V
WHT AUTO WHITE (R)
ORN ZOOM (W)
RED ZOOM (T)
BRN +8.7V
R
BLU AGC CONT.
GRY IRIS CONT.
YEW IRIS SET
ORN +12V
BLK GND
BRN GND
LENS
A
+8.7V VT SIGNAL
YEW ORN WHT
1 2 3 4
PRE AMP
GND ORN
COLOR MULTI SIGNAL
BIAS LIGHT
PICK UP TUBE
BRN RED
+B BALANCE
EVF PLUG
VIDEO LEVEL
VIDEO IN
5.0V
OUT DOOR
R LED
IN DOOR
BLU WHT CRN RED GRY YEW
AMP AND DRIVE PART
1 2 3 4 5 6 7 8
EVF BOARD
H.DRIVE V.DEF VIDEO V.HIGHT V.DEF H.HOLD 5.0V GND
HVT
OUT PART
4 3 2 1
GRN YEW BLU RED
WHT BLU YEW PRP
RED BLK
HV WHT
HV
H H G1 K
G2 G3
V DY V DY H DY H DY
DY ASSY
CR
1 2 3 4 5 6 7 8 9 10

5 BLOCK DIAGRAM OF EVF


A
B
C
D
E
F
V02 CRT
1 (A)
2 (G3)
3 (G2)
6 (G1)
4 (H)
5 (H)
7 (K)
DY02
DEF YOKE
V
H
Z1
Z2
Z4
Z3
G1
G3
G2
H
H
K
5V
EVF
BOARD
Q831
G1 DRIVE
C833
R834
BRIGHT
FOCUS
R842
R843
R BLOCK
HV
T831 HVT
R873
V.HEIGHT
LIN. COIL
Q832
H.OUT
R841
H.HOLD
5V
GND
VIDEO
V. DEF
V.HEIGHT
V. DEF
H.DRIVE
H.HOLD
IC801
VIDEO AMP, SYNC SEP,
V, H AMP & DRIVE
DISPLAY MIX
VERTICAL OSC
VERTICAL DRIVE & OUT
HORIZONTAL OSC
IRIS LEVEL DISPLAY
VIDEO AMP
SYNC SEP.
V. SYNC SEP.
REFERENCE VOLTAGE
HORIZONTAL AFC
C802
Q802
REF. VOLTAGE
D802
D803
D804
+5V
P02
EVF CONNECTOR PLUG
(8 PIN)
OUT DOOR
R. LED
IN DOOR
VIDEO LEVEL
+5V
VIDEO
GND

1 2 3 4 5

6 BLOCK DIAGRAM OF LENS (GX-N7U/UT)


R 1
R 2
R 3
R 4
R 5
R 6
GND
GND
+12V
IRIS SET
IRIS CONT.
AGC CONT.
S 1
S 2
S 3
S 4
S 5
S 6
+8.7V
ZOOM (T)
ZOOM (W)
AUTO WHITE (R)
AW +5V (REF)
AUTO WHITE (B)
AUTO IRIS BOARD
AUTO
MAN.
IRIS SW
AF SW
ON
OFF
BLC SW
IC101
Q301, Q303 POWER ZOOM DRIVE
Q302, Q304 POWER ZOOM DRIVE
POWER ZOOM BOARD
AUTO FOCUS BOARD
METER
IRIS
DRIVE
DAMP
IRED
IRED DRIVE
POWER SUPPLY
μ COM.
|A-B|>Vo
A>B
A+B≥VH
A+B≥VL
A - D CONVER -TER
BUFFER
BUFFER
SYNCHRONOUS AMP
SYNCHRONOUS AMP
PRE AMP
PRE AMP
MOTOR DRIVE
AF MOTOR
ZOOM MOTOR
DICHROIC MIRROR
SURFACE REFLECTING MIRROR
ZOOM RING
FOCUS RING
LENS
A
B
SPD
COLOR SENSER
A
B
C
D
E
F
1
2
3
4
5

10. CA-G001A CDP BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
RG001	QRS148J-103YL	QRS148J-472YL	CH MG R	○	10kΩ→4.7kΩ
RG006	″ -822YL	″ -182YL	″	○	8.2kΩ→1.8kΩ
RG010	″ -103YL	″ -472YL	″	○	10kΩ→4.7kΩ
RG013	″ -102YL	″ -471YL	″	○	1kΩ→470Ω
RG016	———	″ -561YL	″	—	560Ω, 1/4W, J
RG020	QRS148J-103YL	″ -332YL	″	○	10kΩ→3.3kΩ
RG021	″ -103YL	″ -333YL	″	○	″
RG026	″ -822YL	″ -182YL	″	○	8.2kΩ→1.8kΩ
RG029	″ -102YL	″ -471YL	″	○	1kΩ→470Ω
CG013	CE40036-105WM	CE40623-105YM	CH AL E Cap.	×	CH Tan. E Cap.→CH AL E Cap. 35V→16V
CG015	″ -105XM	CE40706-106YM	CH AL BP E Cap.	×	CH Tan E Cap.→CH AL BP E Cap. 1μF, 35V→10μF, 50V
CG016	CE40713-475WM	CE40622-106YM	CH AL E Cap.	×	CH Tan E Cap.→CH AL E Cap. 4.7μF, 10V→10μF, 16V
CG027	CE40036-105WM	CE40623-105YM	″	×	CH Tan E Cap.→CH AL E Cap. 35V→16V
CG031	CE40713-475WM	CE40622-106YM	″	×	CH Tan E Cap.→CH AL E Cap. 4.7μF, 10V→10μF, 16V
DG001	———	MA151A	Chip Doiode	—	Part addition

11. CA-H001A AGC BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
RH001	QRS148J-102YL	QRS148J-821YL	CH MG R	○	1kΩ→820μ
RH002	″ -182YL	″ -152YL	″	○	18kΩ→820Ω
RH003	″ -222YL	″ -182YL	″	○	2.2kΩ→1.8kΩ
RH006	″ -333YL	″ -473YL	″	○	33kΩ→47kΩ
RH023	QRSA08J-104YL	QRD181J-104A	C R	×	CH MG R→C R 1/10W→1/8W
RH027	QRS148J-122YL	QRSA08J-122YL	CH MG R	×	1/4W→1/10W
RH029	QRSA08J-681YL	″ -471YL	″	○	680Ω→470Ω
RH037	QRS148J-563YL	———	″	—	Part deletion
RH038	″ -474YL	———	″	—	″
RH039	″ -223YL	———	″	—	″
RH044	QRS148J-332YL	QRSA08J-332YL	″	×	1/4W→1/10W
RH051	″ -101YL	″ -101YL	″	×	″
RH052	———	QRD181J-182A	C R	—	1.8kΩ, 1/8W, J
CH001	———	QCS11HJ-680A	C Cap.	—	68pF, 50V, J
CH002	———	″ -181	″	—	180pF, ″ ″
CH003	QCF81HZ-473YLA	QCF81HZ-473YLS	CH C Cap.	○	
CH006	QCS81HJ-121YL	QCS81HJ-181YLS	″	○	120pF→180pF
CH010	CE40622-106YM	———	CH AL E Cap.	—	Part deletion
CH015	———	QCS81HJ-680YLA	CH C Cap.	—	68pF, 50V, J
CH016	———	CE40622-106YM	CH AL E Cap.	—	10μF, 16V, M
CH017	———	QCS81HJ-150YLS	CH C Cap.	—	15pF, 50V, J
DH002	MA151A	———	Chip Diode	—	Part deletion
DH003	″	1S2473H	Si Diode	×	Chip Diode→Si diode
QH006	2SB709(P-R)	———	Chip Transistor	—	Part deletion
QH007	2SC2778(B,C)	———	″	—	Part deletion
DLH001	CE40657-A0A	CE40657-B0A	Delay Line	○	Part modification

12. DIFFERENCE BETWEEN CA-J001A AND CA-J003A

(Note) CA-J001A board was replaced with CA-J003A board from July 1984 production lots.
No interchangeability exists between CA-J001A board and CA-J003A board.

View No.	CA-J001A	CA-J003A	Part Name	Interchange-ability	Remarks
RJ013	QRS148J-272YL	QRS148J-392YL	CH MG R	○	2.7kΩ→3.9kΩ
RJ015	″ -822YL	″ -272YL	″	○	8.2kΩ→2.7kΩ
RJ021	″ -223YL	″ -273YL	″	○	22kΩ→27kΩ
RJ022	″ -472YL	″ -103YL	″	○	4.7kΩ→10kΩ
RJ023	———	″ -152YL	″	—	1.5kΩ, 1/4W, J
RJ024	———	″ -102YL	″	—	1kΩ, ″ ″
CJ004	QCS81HJ-100YLA	QCS81HJ-270YLA	CH C Cap.	○	10pF→27pF
DJ002	———	MA157	Chip Diode	—	Part addition
DJ003	———	MA151A	″	—	″

13. CA-K001A SSG BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
RK001	QRSA08J-152YL	QRSA08J-562YL	CH MG R	○	1.5kΩ→5.6kΩ
RK002	″ -561YL	″ -222YL		○	560Ω→2.2kΩ
CK010	QCT81CH-4R0YLS	QCT81CH-7R0YLS	CH C Cap.	○	4pF→7pF
CK011	QAT3110-7R0A	QAT3110-100A	Trimmer Cap.	○	7pF→10pF
CK024	QCS11HJ-181	———	C Cap.	—	Part deletion

14. DIFFERENCE BETWEEN CA-L001A AND CA-L003A

(Note) CA-L001A board was replaced with CA-L003A board from July 1984 production lots.
No interchangeability exists between CA-L001A board and CA-L003A board.

View No.	CA-L001A	CA-L003A	Part Name	Interchange-ability	Remarks
RL001	QRS148J-124YL	QRS148J-563YL	CH MG R	○	120kΩ→56kΩ
RL002	″ -471YL	———	″	—	Part deletion
RL024	———	QRS148J-103YL	″	—	10kΩ, 1/4W, J
RL031	———	QRD161J-102	C R	—	1kΩ, 1/6W, J
RL032	———	″ -102	″	—	″
CL011	CE40713-475XM	CE40622-475YM	CH AL E Cap.	×	CH Tan E Cap.→CH AL E Cap. 10V→16V
CL021	″ -475XM	″ -106YM	″	×	CH Tan E Cap.→CH AL E Cap. 4.7μF, 10V→10μF, 16V
DL001	1S2473H	———	Si Diode	—	Part deletion
DL002	———	1S2473H	″	—	Part addition
DL003	———	MA4120(M,H)	Zener Diode	—	″

15. DIFFERENCE BETWEEN CA-M001A AND CA-M003A

(Note) CA-M001A board was replaced with CA-M003A board from July 1984 production lots.
No interchangeability exists between CA-M001A board and CA-M003A board.

View No.	CA-M001A	CA-M003A	Part Name	Interchange-ability	Remarks
QM001	2SB709(P-R)	2SC2778(B,L)	Chip Transistor	×	Part modification
QM002	〃	〃	〃	×	〃

16. DIFFERENCE BETWEEN CA-M002A AND CA-M004A

(Note) CA-M002A board was replaced with CA-M004A board from July 1984 production lots.
No interchangeability exists between CA-M002A board and CA-M004A board.

View No.	CA-M002A	CA-M004A	Part Name	Interchange-ability	Remarks
RM007	QRS148J-223YL	———	CH MG R	–	Part deletion
QM001	2SB709(P-R)	2SC2778(B,C)	Chip Transistor	×	Part modification

17. CA-2071A PREAMP BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
C2001	A76268-473	QCZ0210-473U	C Cap.	○	MP Cap.→C Cap.
C2010	QCS81HJ-3R0YLA	QCS81HJ-1R5YLA	CH C Cap.	○	3pF→1.5pF

18. CA-6071A EVF BOARD

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
R6811	———	ERT-D2FEL200S	Thermistor	–	20Ω
R6812	QRS148J-562YL	QRS148J-682YL	CH MG R	○	5.6kΩ→6.8kΩ
R6816	〃 -102YL	〃 -221YL	〃	○	1kΩ→220Ω
R6817	〃 -102YL	〃 -471YL	〃	○	1kΩ→470Ω
R6818	〃 -102YL	〃 -331YL	〃	○	1kΩ→330kΩ
C6838	QETA2AM-106	QEE41CK-106B	Tan Cap.	×	E Cap.→Tan Cap. 63V→35V
D6805	———	MA3120(L-H)	Chip Zener Diode	–	Part addition
D6832	———	〃	〃	–	〃

19. PACKING PARTS LIST

View No.	Previous	Present	Part Name	Interchange-ability	Remarks
6	QPGA005-00703	———	Poly Bag	–	
〃	———	CE40698-00D	STEREO MIC	–	For GX-N7U/UT } Misprint
〃	———	CE40705-00D	MONO MIC	–	For GX-N4U/UT
15	———	SLR-SHEET-A	Lens Information	–	
17	CP20065-023	CP20065-043	Packing Case	○	For GX-N7U
〃	〃 -027	〃 -044	〃	○	For GX-N4U

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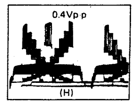
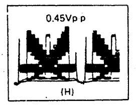
7 BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N7U/UT)

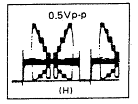
① B8



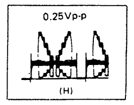
② B7



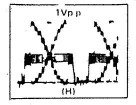
③ D8



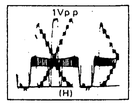
④ D9



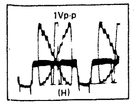
⑤ F12



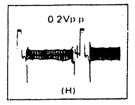
⑥ F13



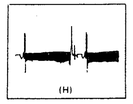
⑦ F14



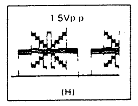
⑧ J5



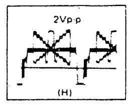
⑨ J6

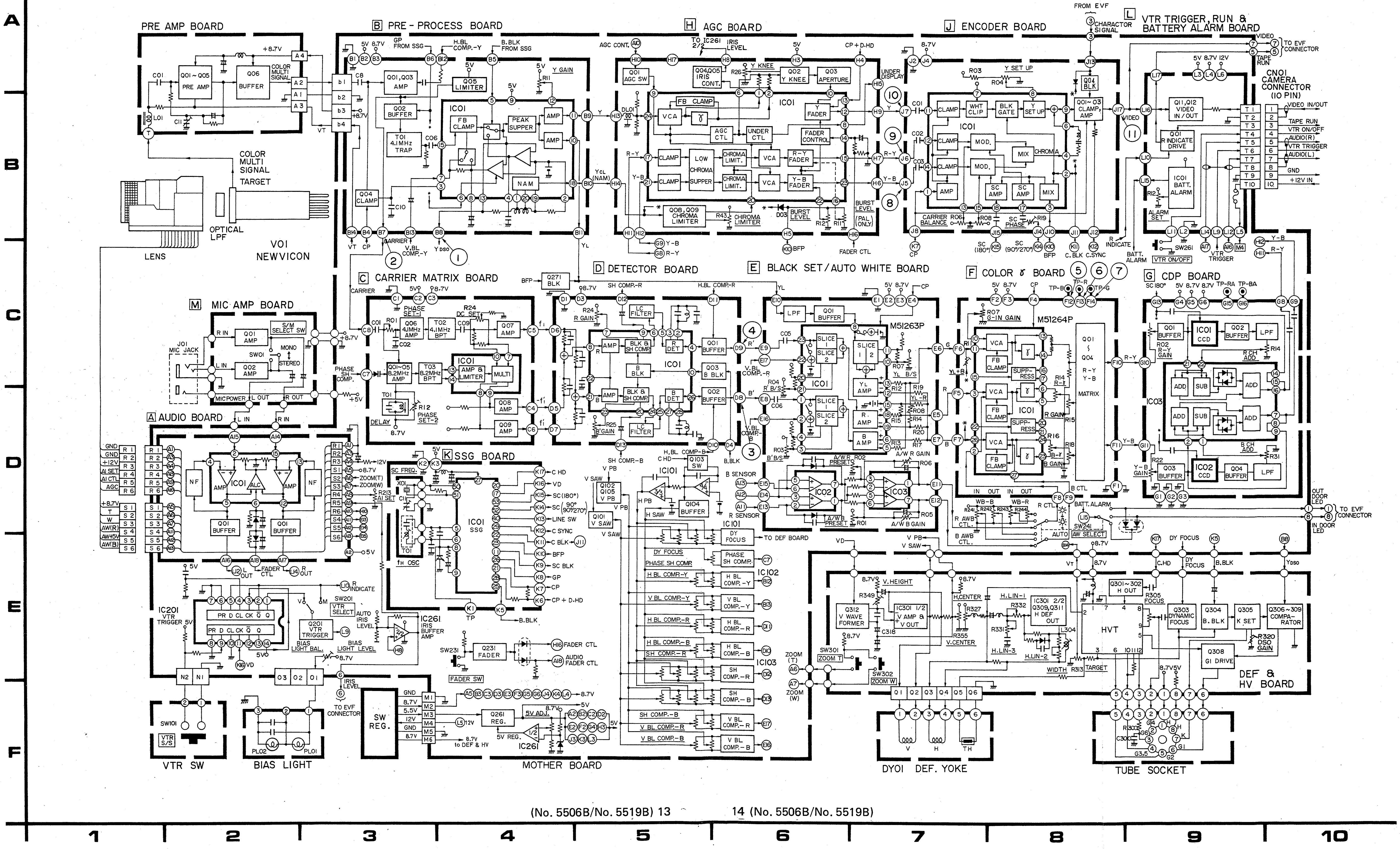


⑩ J7

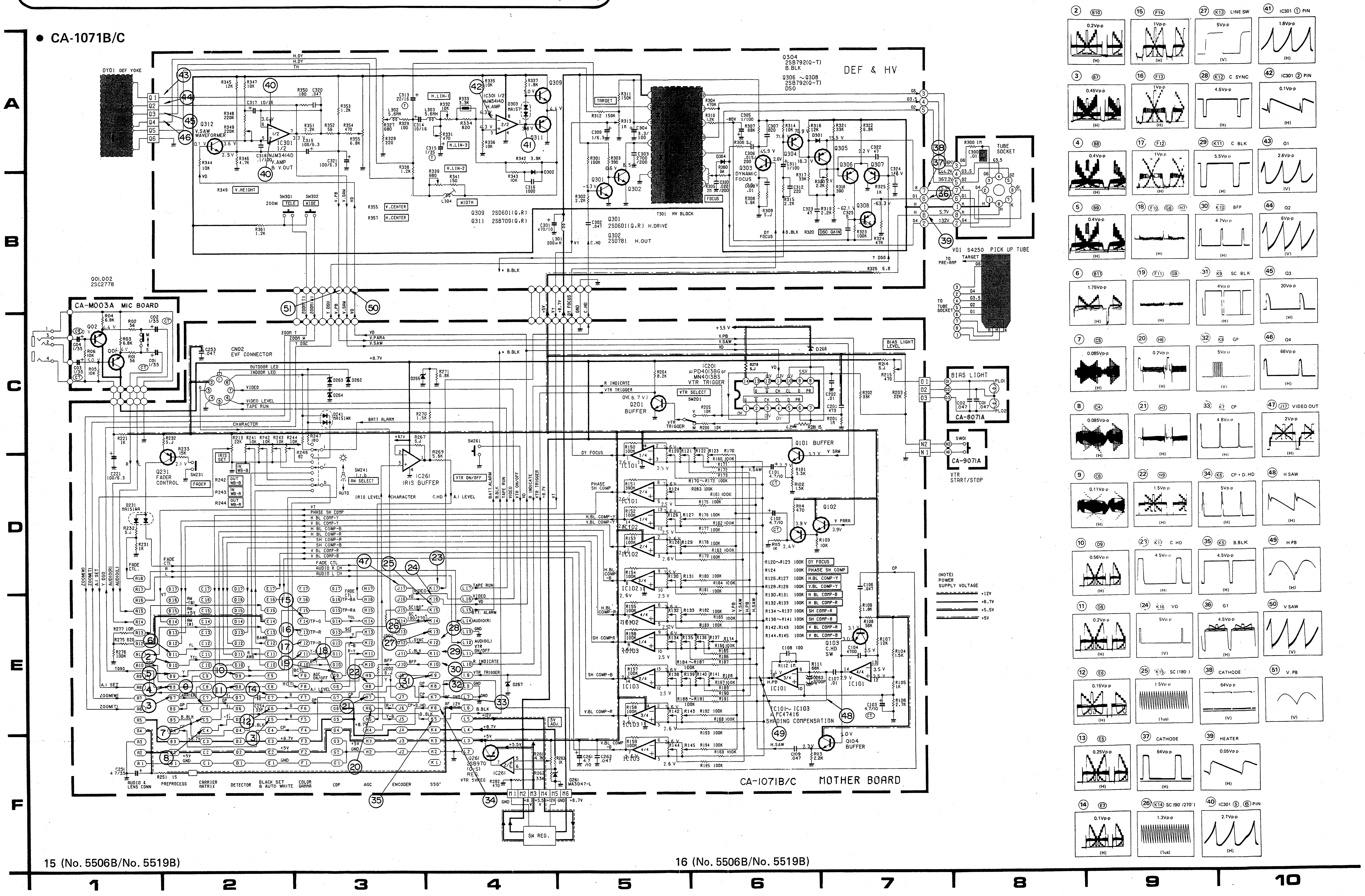


⑪ J17




A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
PRE AMP BOARD
Q01~Q05 PRE AMP
Q06 BUFFER
COLOR MULTI SIGNAL
COLOR MULTI SIGNAL TARGET
OPTICAL LPF
LENS
V01 NEWVICON
B PRE-PROCESS BOARD
Q01,Q03 AMP
Q02 BUFFER
T01 4.1MHz TRAP
Q05 LIMITER
FB CLAMP
PEAK SUPPER
NAM
Q04 CLAMP
H AGC BOARD
Q01 AGC SW
Q04,Q05 IRIS CONT.
Q02 Y KNEE
Q03 APERTURE
FB CLAMP
VCA
AGC CTL
UNDER CTL
Y FADER
FADER CONTROL
LOW CHROMA SUPPER
CHROMA LIMIT.
R-Y FADER
Y-B FADER
Q08,Q09 CHROMA LIMITER
CHROMA LIMITER
BURST LEVEL
J ENCODER BOARD
WHT CLIP
BLK GATE
Y SET UP
MOD.
MIX
SC AMP
Q01~03 CLAMP, AMP
Q04 BLK
CARRIER BALANCE
SC PHASE
L VTR TRIGGER, RUN & BATTERY ALARM BOARD
Q11,Q12 VIDEO IN/OUT
Q01 R INDICATE DRIVE
IC01 BATT. ALARM
CN01 CAMERA CONNECTOR (10 PIN)
VIDEO IN/OUT
TAPE RUN
VTR ON/OFF
AUDIO(R)
VTR TRIGGER
AUDIO(L)
GND
+12V IN
TO EVF CONNECTOR
FROM EVF
C CARRIER MATRIX BOARD
Q06 4.1MHz AMP
T02 4.1MHz BPT
Q07 AMP
Q01~Q05 8.2MHz AMP
T03 8.2MHz BPT
AMP & LIMITER
MULTI
DELAY
PHASE SET-1
PHASE SET-2
Q08 AMP
Q09 AMP
Q271 BLK
D DETECTOR BOARD
LC FILTER
BLK & SH COMP
R DET
B DET
Q01 BUFFER
Q03 B BLK
Q02 BUFFER
E BLACK SET/AUTO WHITE BOARD
LPF
Q01 BUFFER
M51263P
SLICE
YL AMP
R AMP
B AMP
A/W R PRESET
A/W B PRESET
A/W R GAIN
A/W B GAIN
F COLOR γ BOARD
M51264P
VCA
FB CLAMP
SUPPRESS
Q01~Q04 R-Y Y-B MATRIX
G CDP BOARD
Q01 BUFFER
IC01 CCD
Q02 BUFFER
LPF
ADD
SUB
IC03
IC02 CCD
Q03 BUFFER
Q04 BUFFER
M MIC AMP BOARD
Q01 AMP
Q02 AMP
S/M SELECT SW
MONO
STEREO
J01 MIC JACK
A AUDIO BOARD
IC01
ALC
NF
Q01 BUFFER
Q01 BUFFER
K SSG BOARD
IC01 SSG
fH OSC
IC201 VTR TRIGGER
PR D CL CK Q̄ Q
Q201 VTR TRIGGER
IC261 IRIS BUFFER AMP
SW201 VTR SELECT
SW231
Q231 FADER
FADER SW
SW101 VTR S/S
VTR SW
BIAS LIGHT
SW REG.
Q261 REG.
MOTHER BOARD
IC101
DY FOCUS
PHASE SH COMP.
H BL COMP.-Y
V BL COMP.-Y
H BL COMP.-R
H BL COMP.-B
SH COMP.-R
SH COMP.-B
V BL COMP.-R
V BL COMP.-B
IC102
IC103
Q101 V SAW
Q102 Q105 V PB
Q103 SW
Q104 BUFFER
DEF & HV BOARD
Q312 V WAVE FORMER
IC301 1/2 V AMP & V OUT
V.HEIGHT
V.CENTER
H.CENTER
H.LIN-1
H.LIN-2
H.LIN-3
IC301 2/2 Q309,Q311 H DEF OUT
HVT
Q301~302 H OUT
Q303 DYNAMIC FOCUS
Q304 B.BLK
Q305 K SET
Q306~309 COMPARATOR
Q308 G1 DRIVE
DY01 DEF. YOKE
TUBE SOCKET
ZOOM (T)
ZOOM (W)
SW301
SW302

8-1 CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N7U/UT)

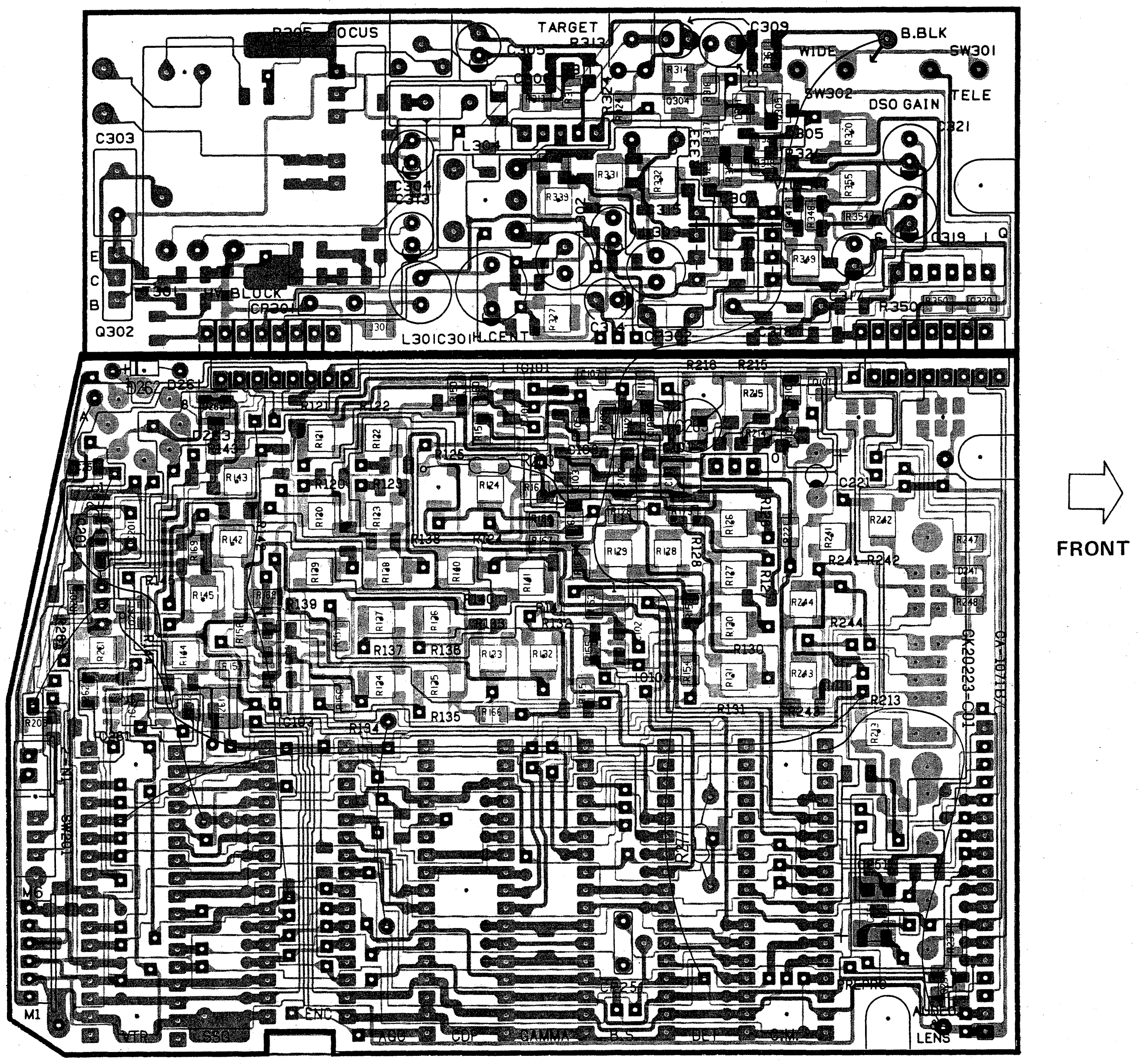

● CA-1071B/C
DEF & HV
DY01 DEF YOKE
Q312 V.SAW WAVEFORMER
IC301 1/2 NJM3414D V.AMP
IC301 2/2 NJM3414D H.AMP
H.LIN-1
H.LIN-2
H.LIN-3
WIDTH
V.HEIGHT
V.CENTER
H.CENTER
SW301 TELE
SW302 WIDE
ZOOM
Q309 2SD601(Q.R)
Q311 2SB709(Q.R)
Q301 2SD601(Q.R) H.DRIVE
Q302 2SD781 H.OUT
T301 HV BLOCK
TARGET
FOCUS
Q303 DYNAMIC FOCUS
DY FOCUS
DSO GAIN
Q304 2SB792(Q-T) B.BLK
Q306 ~ Q308 2SB792(Q-T) DSO
TUBE SOCKET
V01 S4250 PICK UP TUBE
TO PRE-AMP
TO TUBE SOCKET
Q01, Q02 2SC2778
CA-M003A MIC BOARD
CN02 EVF CONNECTOR
OUTDOOR LED
INDOOR LED
VIDEO
VIDEO LEVEL
TAPE RUN
CHARACTER
BATT ALARM
Q231 FADER CONTROL
SW231 FADER
IRIS SET
IC261 IRIS BUFFER
SW241 IRIS SELECT
IRIS LEVEL
VTR ON/OFF
A.I LEVEL
IC201 μPD4013BG or MN4013BS VTR TRIGGER
VTR SELECT SW201
Q201 BUFFER
VTR TRIGGER
BIAS LIGHT LEVEL
BIAS LIGHT
CA-807IA
SW01
CA-907IA
VTR START/STOP
Q101 BUFFER
Q102 V PARA
Q103 C.HD SW
Q104 BUFFER
IC101 ~ IC103 μPC4741G
SHADING COMPENSATION
PHASE SH COMP
H.BL COMP-Y
V.BL COMP-Y
H.BL COMP-R
SH COMP-R
H.BL COMP-B
SH COMP-B
V.BL COMP-R
V.BL COMP-B
(NOTE) POWER SUPPLY VOLTAGE
+12V
+8.7V
+5.5V
+5V
Q261 2SB970 (Q-S) REG
IC261
SW REG.
5V ADJ.
D261 MA3047-L
AUDIO & LENS CONN
PREPROCESS
CARRIER MATRIX
DETECTOR
BLACK SET & AUTO WHITE
COLOR GAMMA
CDP
AGC
ENCODER
SSG
CA-1071B/C MOTHER BOARD
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
② B10 0.2Vp-p (H)
③ B7 0.45Vp-p (H)
④ B8 0.4Vp-p (H)
⑤ B9 0.4Vp-p (H)
⑥ B11 1.75Vp-p (H)
⑦ C5 0.085Vp-p (H)
⑧ C4 0.085Vp-p (H)
⑨ C6 0.11Vp-p (H)
⑩ D9 0.56Vp-p (H)
⑪ D8 0.2Vp-p (H)
⑫ E6 0.15Vp-p (H)
⑬ E5 0.25Vp-p (H)
⑭ E7 0.1Vp-p (H)
⑮ F14 1Vp-p (H)
⑯ F13 1Vp-p (H)
⑰ F12 1Vp-p (H)
⑱ F10 G8 H7 (H)
⑲ F11 G9 (H)
⑳ H6 0.2Vp-p (H)
㉑ H7 (H)
㉒ H9 1.5Vp-p (H)
㉓ K17 C HD 4.5Vp-p (H)
㉔ K16 VD 5Vp-p (V)
㉕ K15 SC (180°) 1.5Vp-p (1us)
㉖ K14 SC (90°/270°) 1.3Vp-p (1us)
㉗ K13 LINE SW 5Vp-p (V)
㉘ K12 C SYNC 4.5Vp-p (H)
㉙ K11 C BLK 5.5Vp-p (H)
㉚ K10 BFP 4.7Vp-p (H)
㉛ K9 SC BLK 4Vp-p (H)
㉜ K8 GP 5Vp-p (V)
㉝ K7 CP 4.8Vp-p (H)
㉞ K6 CP + D.HD 5Vp-p (H)
㉟ K5 B.BLK 4.5Vp-p (H)
㊱ G1 4.5Vp-p (H)
㊲ CATHODE 64Vp-p (H)
㊳ CATHODE 64Vp-p (V)
㊴ HEATER 0.05Vp-p (H)
㊵ IC301 ⑤, ⑥ PIN 2.7Vp-p (H)
㊶ IC301 ① PIN 1.8Vp-p (H)
㊷ IC301 ② PIN 0.1Vp-p (H)
㊸ Q1 2.6Vp-p (V)
㊹ Q2 6Vp-p (V)
㊺ Q3 20Vp-p (H)
㊻ Q4 66Vp-p (H)
㊼ J17 VIDEO OUT 2Vp-p (H)
㊽ H SAW (H)
㊾ H PB (H)
㊿ V SAW (V)
(51) V. PB (V)

8-2 BOARD DIAGRAM OF MOTHER BOARD

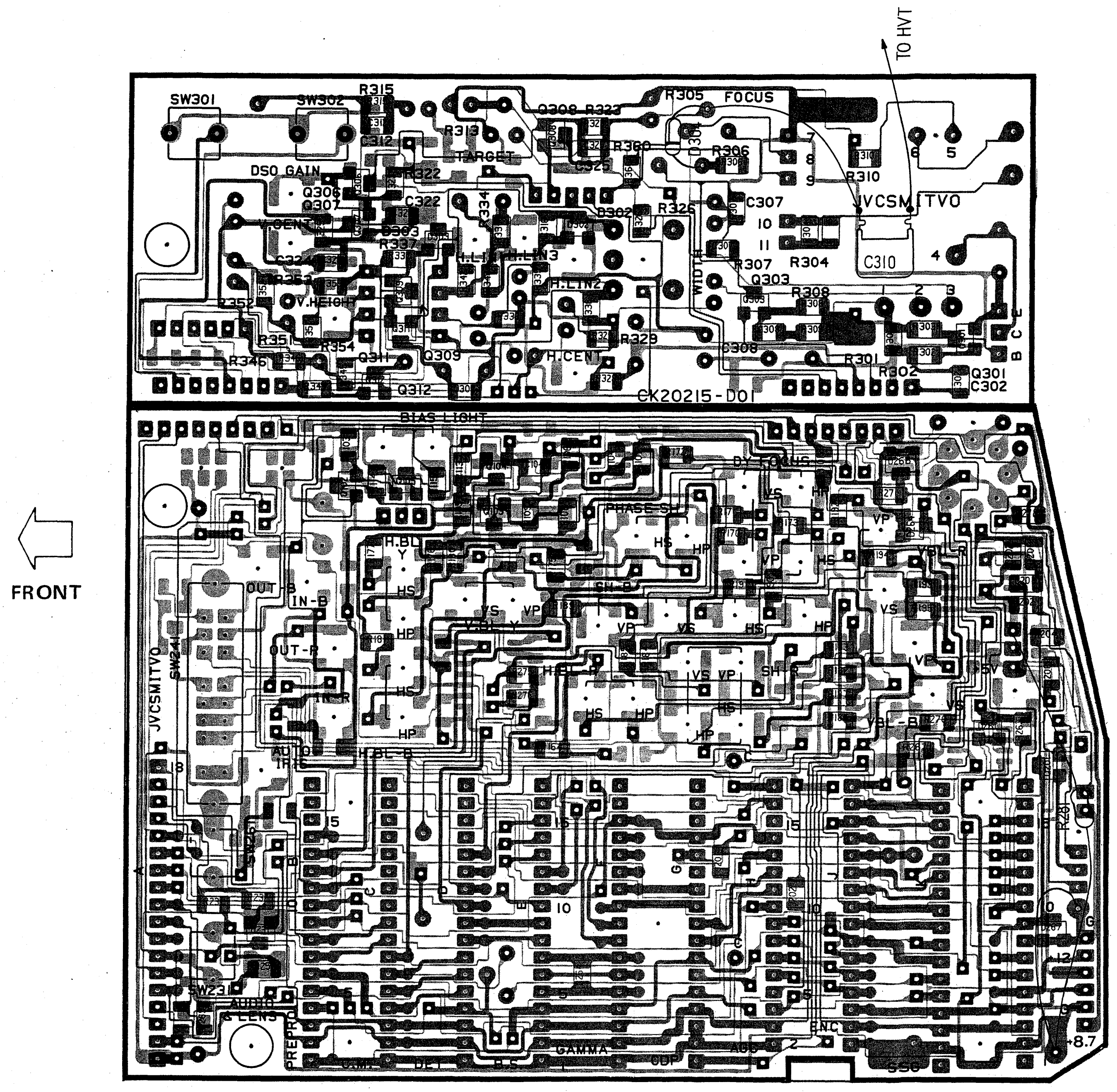
- CA-1071B/C

***Note:** ▨ Red color shows top side pattern of PC BOARD.

▨ Gray color shows bottom side pattern of PC BOARD.


R305
FOCUS
TARGET
R313
C309
B.BLK
SW301
WIDE
SW302
DSO GAIN
TELE
C303
C321
L304
C304
C313
Q319
BLOCK
CP204
L301
C301
H.CENT
Q302
C302
R350
E
C
B
C221
R242
R241
R244
R213
R135
R137
R139
R145
R142
R143
R126
R129
R128
R127
R130
R131
R132
R136
R124
R121
R122
R120
R123
R138
CA-1071B/C
CK20223-C01
M1
ENC
AGC
GAMMA
LENS
FRONT

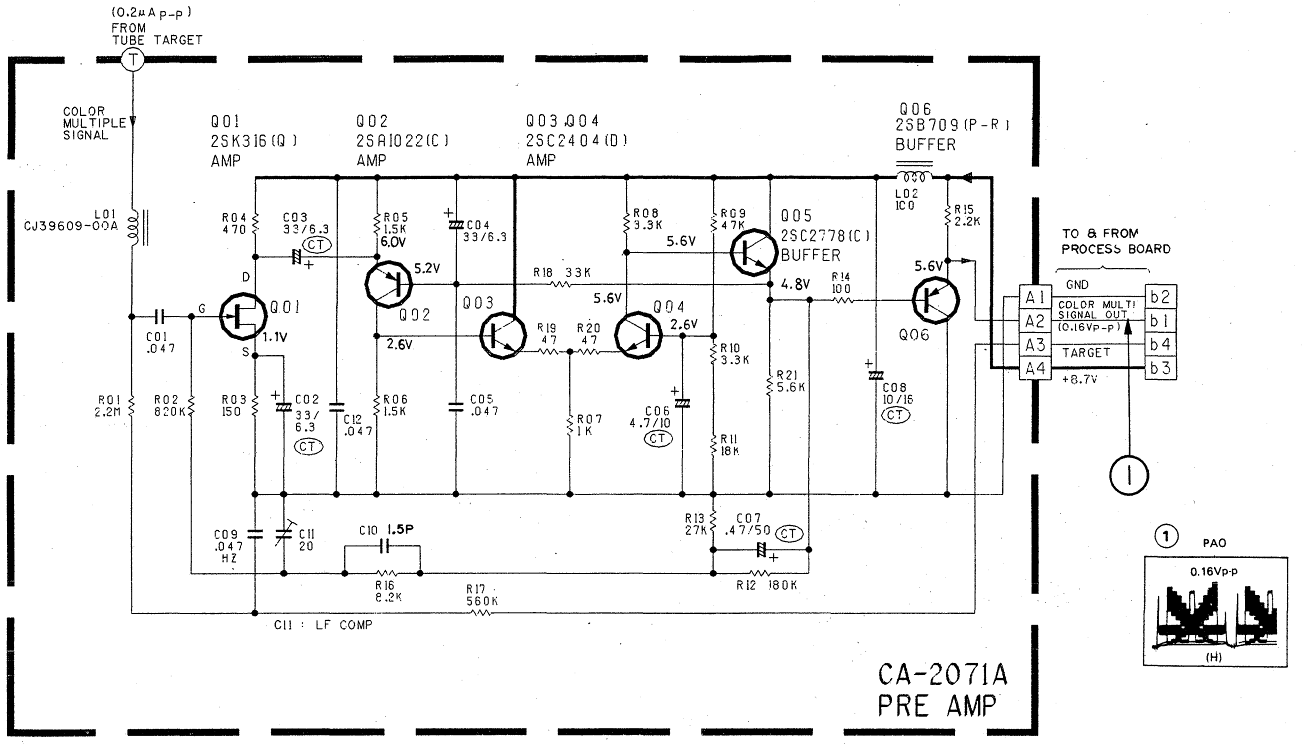
TOP VIEW


TO HVT
SW301
SW302
R315
R305
FOCUS
Q308
R322
R313
TARGET
DSO GAIN
Q306
Q307
V.CENT
C322
Q303
R337
H.LIN1
H.LIN3
H.LIN2
V.HEIGHT
R354
Q311
Q309
H.CENT
R328
Q312
CK20215-D01
R306
R310
C307
JVCSMITVO
R307
R304
C310
Q303
R308
R301
R302
Q301
C302
WIDE
BIAS LIGHT
PHASE
H.BL
OUT-B
IN-B
OUT-R
IN-R
AUDIO
SW24
SW23
LENS
PREFR
GAMMA
AGC
ENC
HS
HP
VS
VP
SH
JVCSMITVO
8.7
FRONT

BOTTOM VIEW

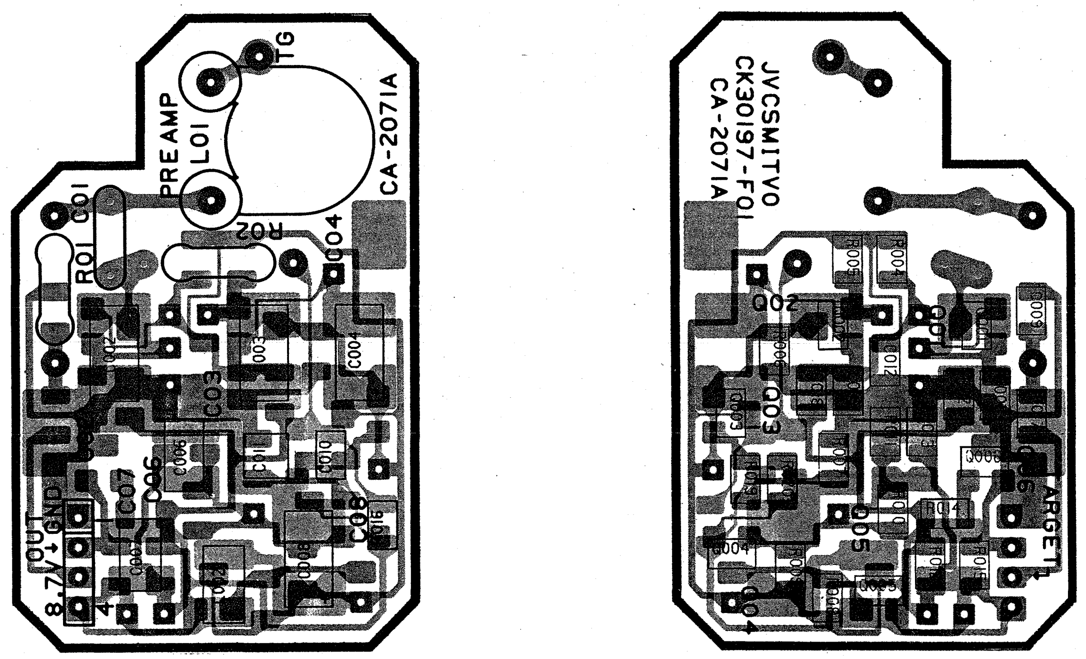
9-1 CIRCUIT DIAGRAM OF PRE-AMP

- CA-2071A


(0.2μA p-p)
FROM TUBE TARGET
COLOR MULTIPLE SIGNAL
Q01 2SK316(Q) AMP
Q02 2SA1022(C) AMP
Q03,Q04 2SC2404(D) AMP
Q06 2SB709(P-R) BUFFER
Q05 2SC2778(C) BUFFER
L01 CJ39609-00A
TO & FROM PROCESS BOARD
GND
COLOR MULTI SIGNAL OUT (0.16Vp-p)
TARGET
+8.7V
C11 : LF COMP
CA-2071A PRE AMP
① PAO
0.16Vp-p
(H)

9-2 BOARD DIAGRAM OF PRE-AMP

- CA-2071A

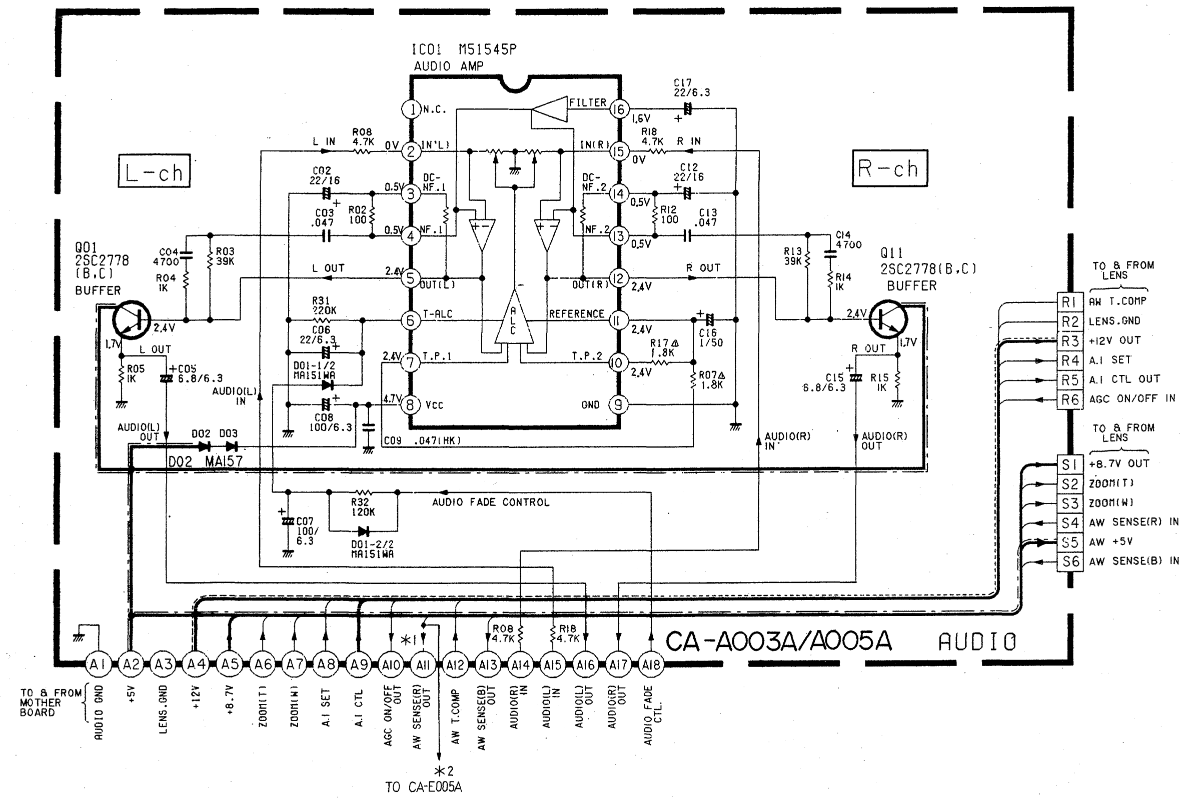

PRE AMP
CA-2071A
JVCSMITVO
CK30197-F01
CA-2071A
TARGET
8.7V
OUT
GND

▨ Top side pattern of PC BOARD.

▨ Bottom side pattern of PC BOARD.

10-1 CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ

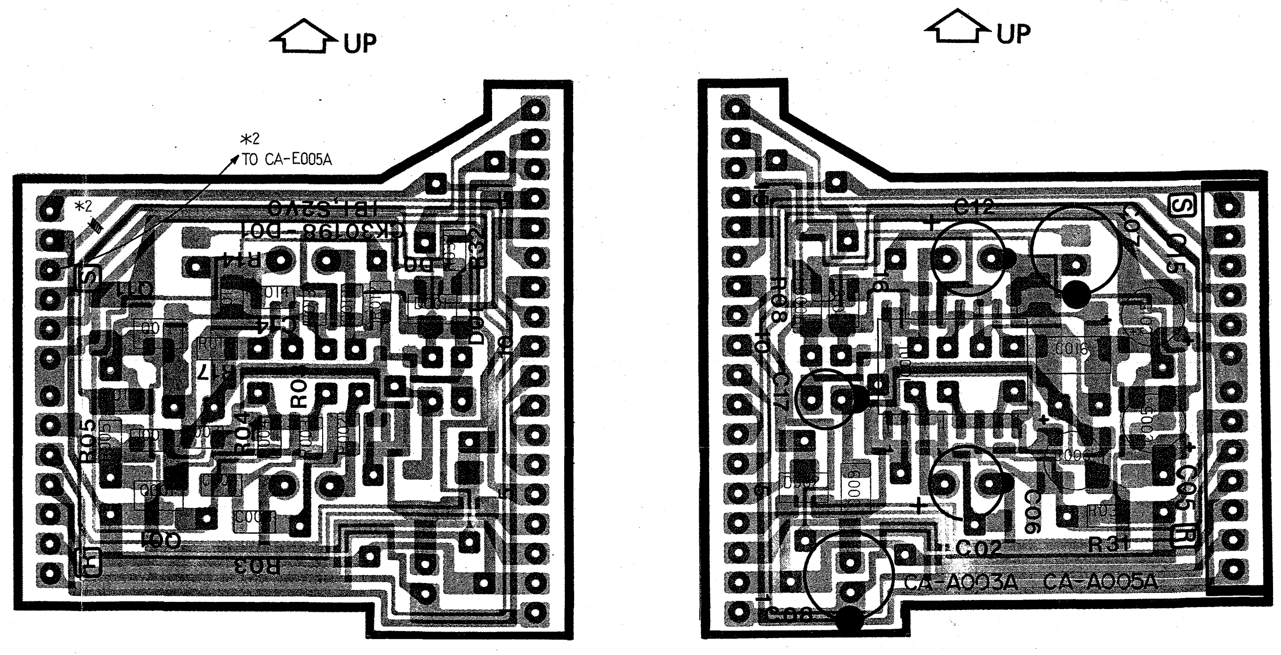
- CA-A003A/A005A


IC01 M51545P AUDIO AMP
L-ch
R-ch
Q01 2SC2778 (B,C) BUFFER
Q11 2SC2778(B,C) BUFFER
TO & FROM LENS
R1 AW T.COMP
R2 LENS.GND
R3 +12V OUT
R4 A.I SET
R5 A.I CTL OUT
R6 AGC ON/OFF IN
S1 +8.7V OUT
S2 ZOOM(T)
S3 ZOOM(W)
S4 AW SENSE(R) IN
S5 AW +5V
S6 AW SENSE(B) IN
AUDIO FADE CONTROL
CA-A003A/A005A AUDIO
TO & FROM MOTHER BOARD
*2 TO CA-E005A

10-2 BOARD DIAGRAM OF AUDIO BOARD Ⓐ

- CA-A003A/A005A

*1 CA-A003A
*2 CA-A005A

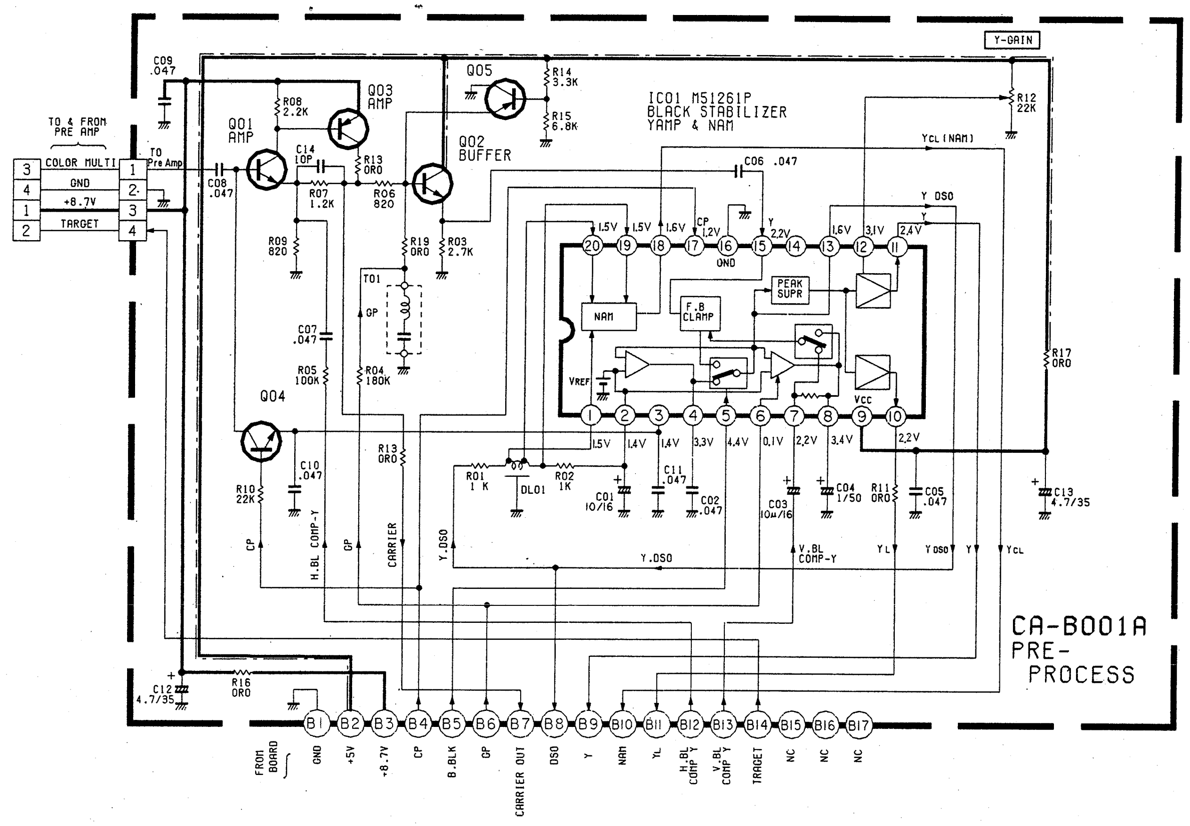

UP
UP
*2
TO CA-E005A
CA-A003A CA-A005A

TOP VIEW

BOTTOM VIEW

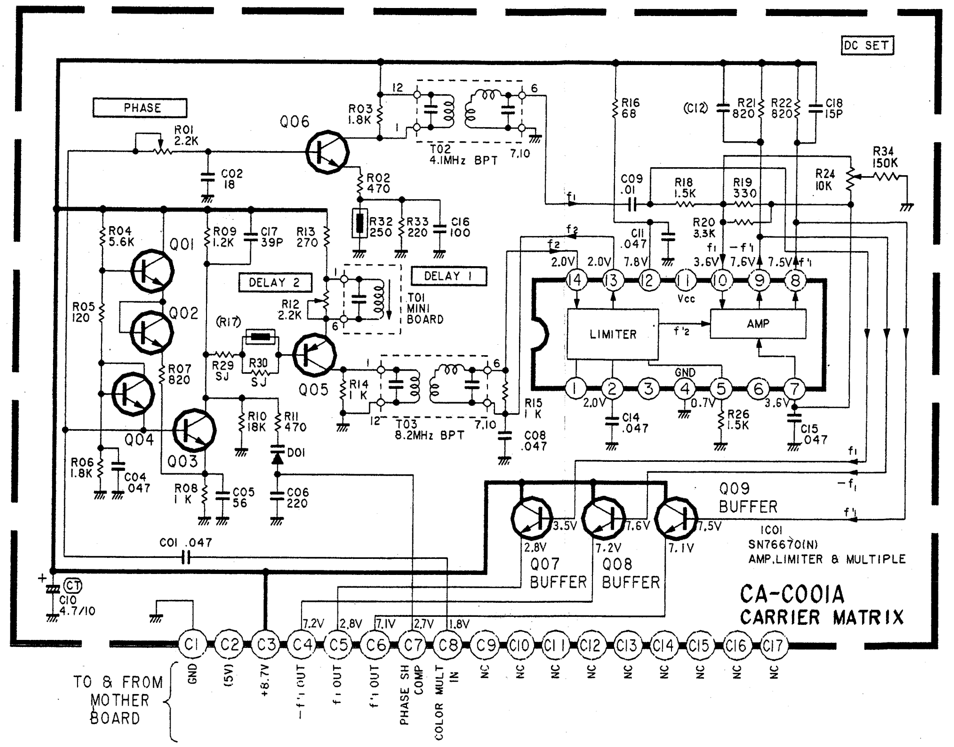
11-1 CIRCUIT DIAGRAM OF PRE-PROCESS BOARD Ⓑ

- CA-B001A


Y-GAIN
TO & FROM PRE AMP
COLOR MULTI
GND
+8.7V
TARGET
TO Pre Amp
Q01 AMP
Q03 AMP
Q05
Q02 BUFFER
Q04
IC01 M51261P BLACK STABILIZER YAMP & NAM
YCL(NAM)
Y DSO
NAM
F.B CLAMP
PEAK SUPR
VREF
VCC
T01
DL01
CP
H.BL COMP-Y
GP
CARRIER
Y.DSO
V.BL COMP-Y
YL
YCL
CA-B001A PRE-PROCESS
FROM BOARD
GND
+5V
+8.7V
CP
B.BLK
GP
CARRIER OUT
DSO
Y
NAM
YL
H.BL COMP'Y
V.BL COMP'Y
TARGET
NC
NC
NC

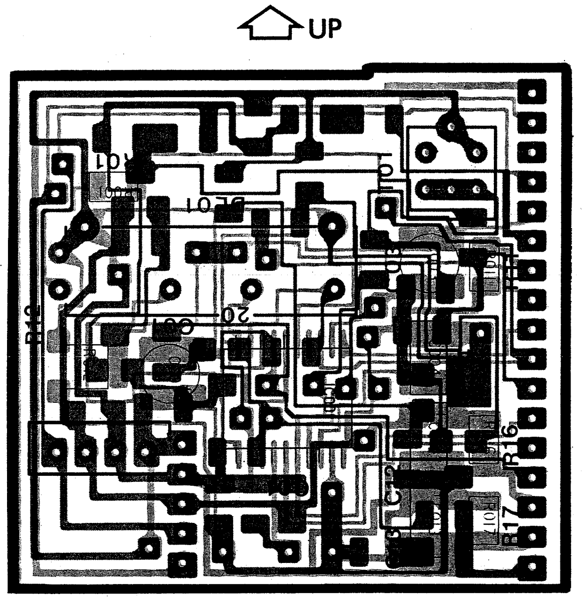
12-1 CIRCUIT DIAGRAM OF CARRIER MATRIX BOARD Ⓒ

- CA-C001A

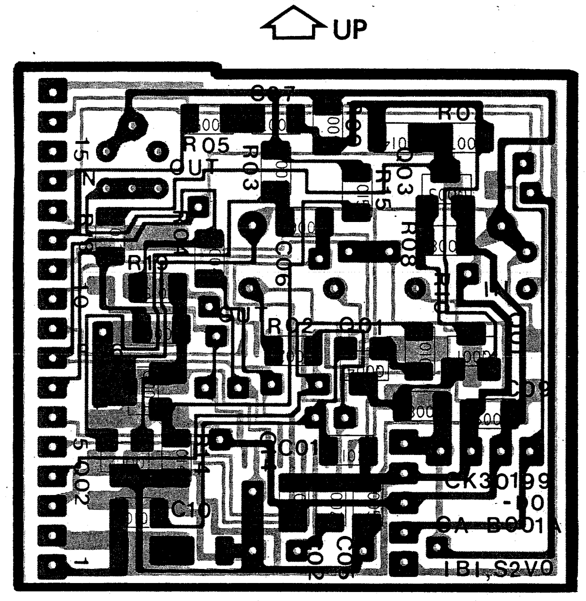

DC SET
PHASE
Q06
T02 4.1MHz BPT
Q01
Q02
Q03
Q04
Q05
DELAY 2
DELAY 1
T01 MINI BOARD
T03 8.2MHz BPT
LIMITER
AMP
Q07 BUFFER
Q08 BUFFER
Q09 BUFFER
IC01 SN76670(N) AMP,LIMITER & MULTIPLE
CA-C001A CARRIER MATRIX
TO & FROM MOTHER BOARD
GND
(5V)
+8.7V
-f1 OUT
f1 OUT
f2 OUT
PHASE SH COMP
COLOR MULT IN
NC

11-2 BOARD DIAGRAM OF PRE-PROCESS BOARD Ⓑ

- CA-B001A



TOP VIEW


UP
CK30199-00
CA-B001A
1B1,S2V0

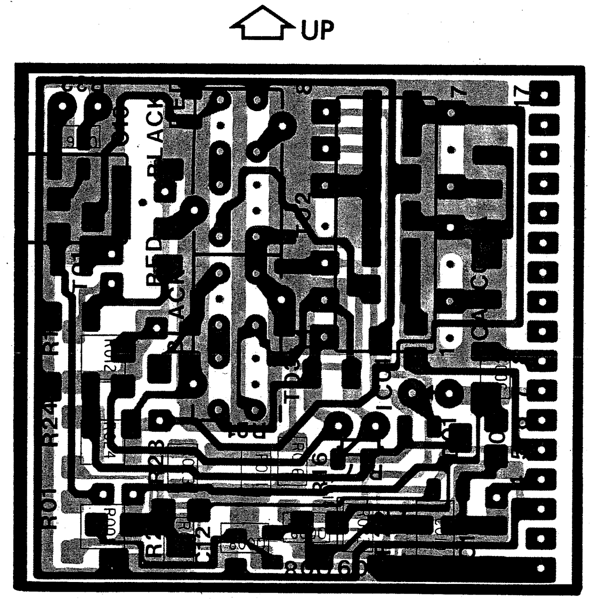
BOTTOM VIEW

▨ Top side pattern of PC BOARD.

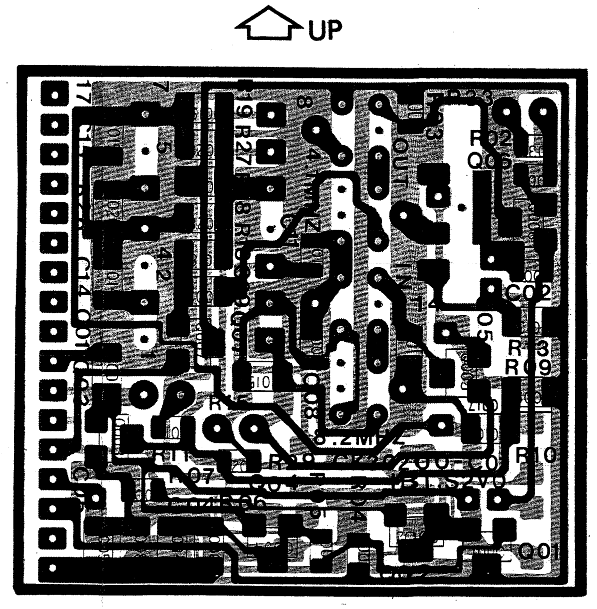
■ Bottom side pattern of PC BOARD.

12-2 BOARD DIAGRAM OF CARRIER MATRIX BOARD Ⓒ

- CA-C001A



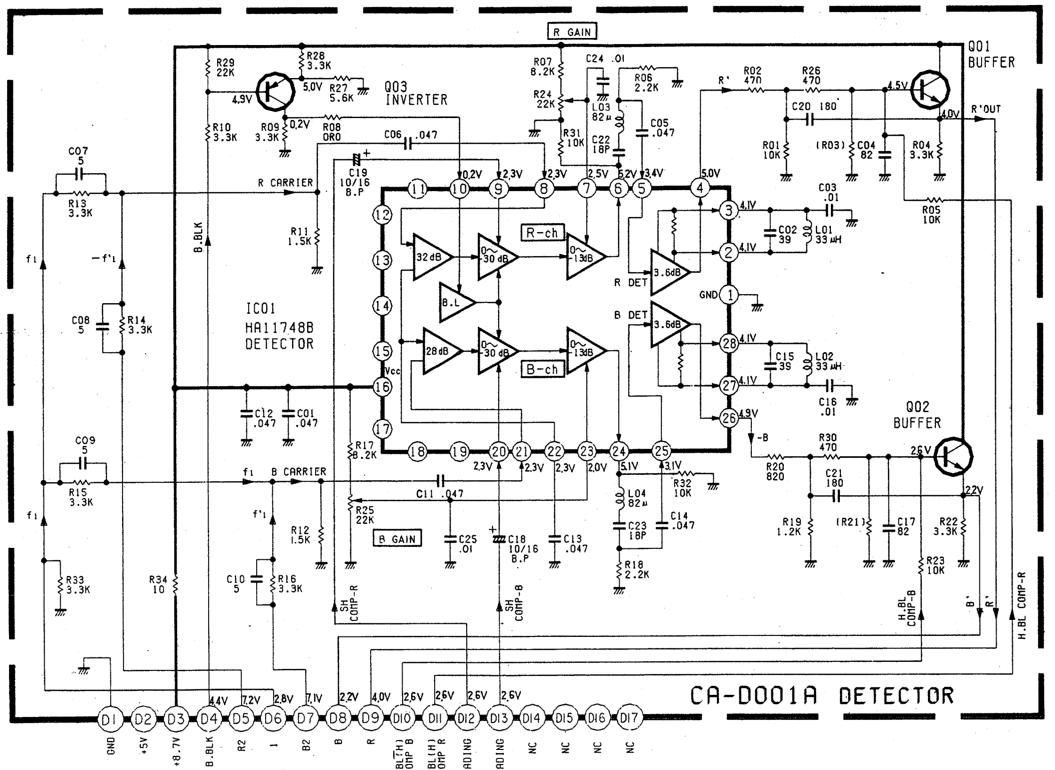
TOP VIEW



BOTTOM VIEW

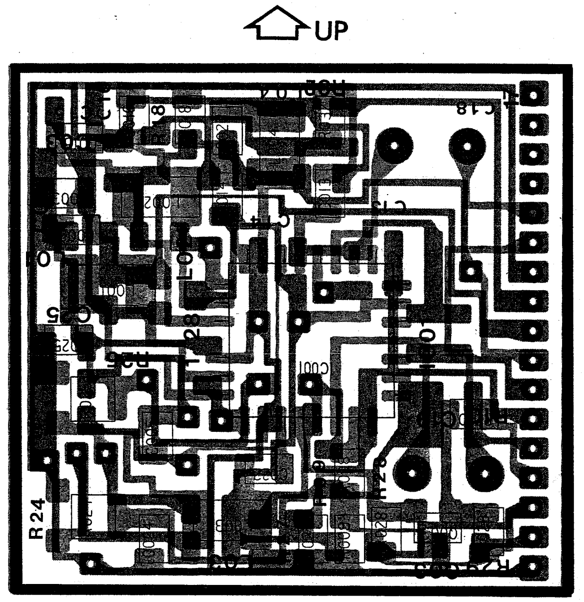
13-1 CIRCUIT DIAGRAM OF DETECTOR BOARD Ⓓ

- CA-D001A

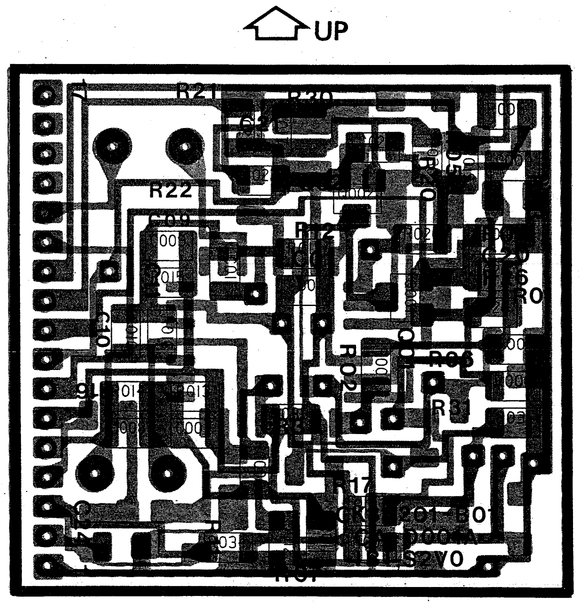

CA-D001A DETECTOR
IC01
HA11748B
DETECTOR
Q01
BUFFER
Q02
BUFFER
Q03
INVERTER
R GAIN
B GAIN
R CARRIER
B CARRIER
R-ch
B-ch
R DET
B DET
R'OUT
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D17
GND
+5V
+8.7V
B.BLK
R2
B2
R
B
BL(H)
COMP B
BL(H)
COMP R
SHADING
SHADING
NC
NC
NC
NC

13-2 BOARD DIAGRAM OF DETECTOR BOARD Ⓓ

- CA-D001A



TOP VIEW

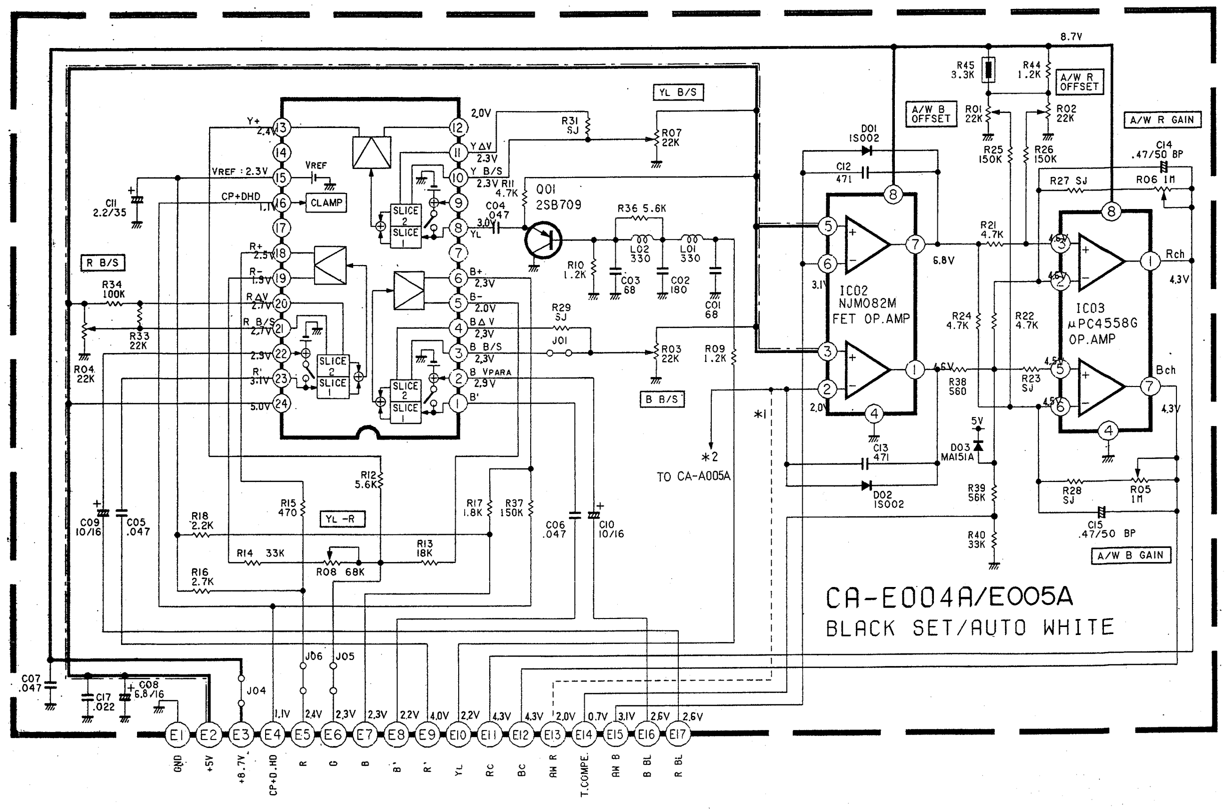


BOTTOM VIEW

▨ Top side pattern of PC BOARD.
■ Bottom side pattern of PC BOARD.

14-1 CIRCUIT DIAGRAM OF BLACK SET/AUTO WHITE BOARD Ⓔ

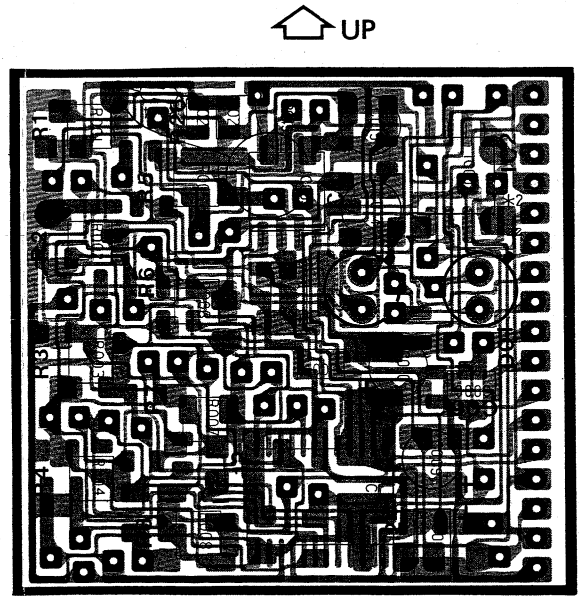
- CA-E004A/E005A


CA-E004A/E005A
BLACK SET/AUTO WHITE
IC02
NJM082M
FET OP.AMP
IC03
μPC4558G
OP.AMP
Q01
2SB709
*1
*2
TO CA-A005A
YL B/S
R B/S
B B/S
YL -R
A/W B OFFSET
A/W R OFFSET
A/W R GAIN
A/W B GAIN
CLAMP
SLICE
Rch
Bch
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E12
E13
E14
E15
E16
E17
GND
+5V
+8.7V
CP+D.HD
R
G
B
R'
YL
Rc
Bc
AW R
AW B
T.COMPE.
R BL
B BL

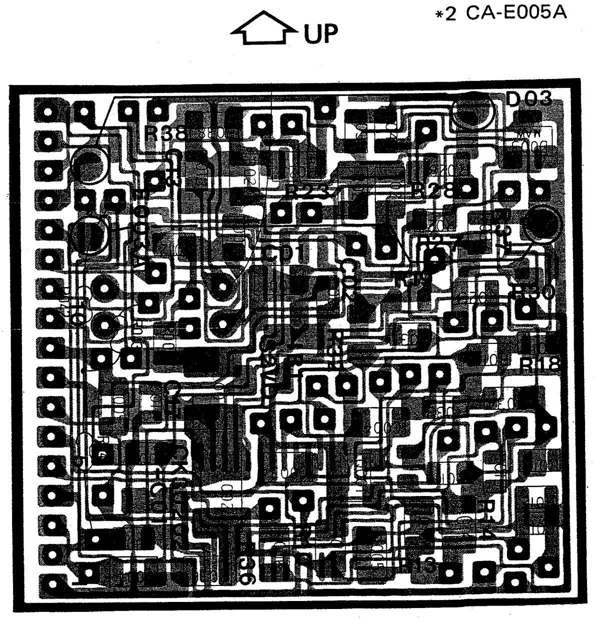
14-2 BOARD DIAGRAM OF BLACK SET/AUTO WHITE BOARD Ⓔ

- CA-E004A/E005A

*1 CA-E004A
*2 CA-E005A



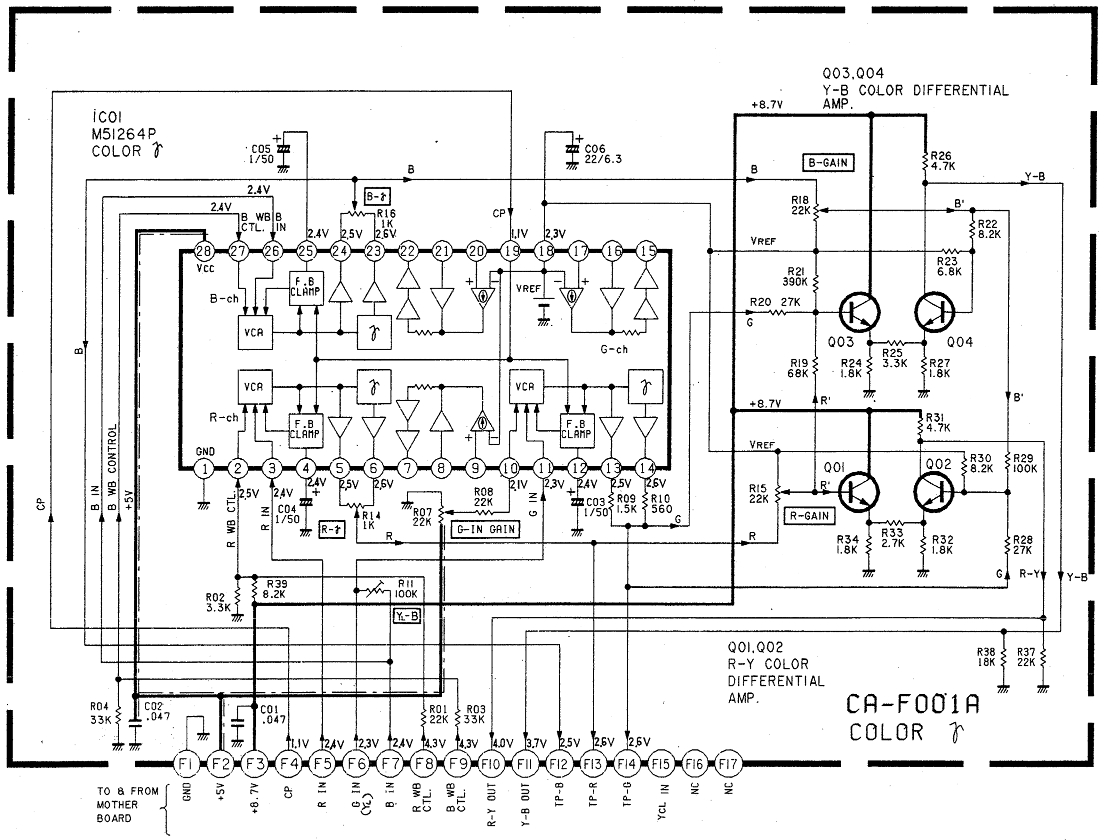
TOP VIEW



BOTTOM VIEW

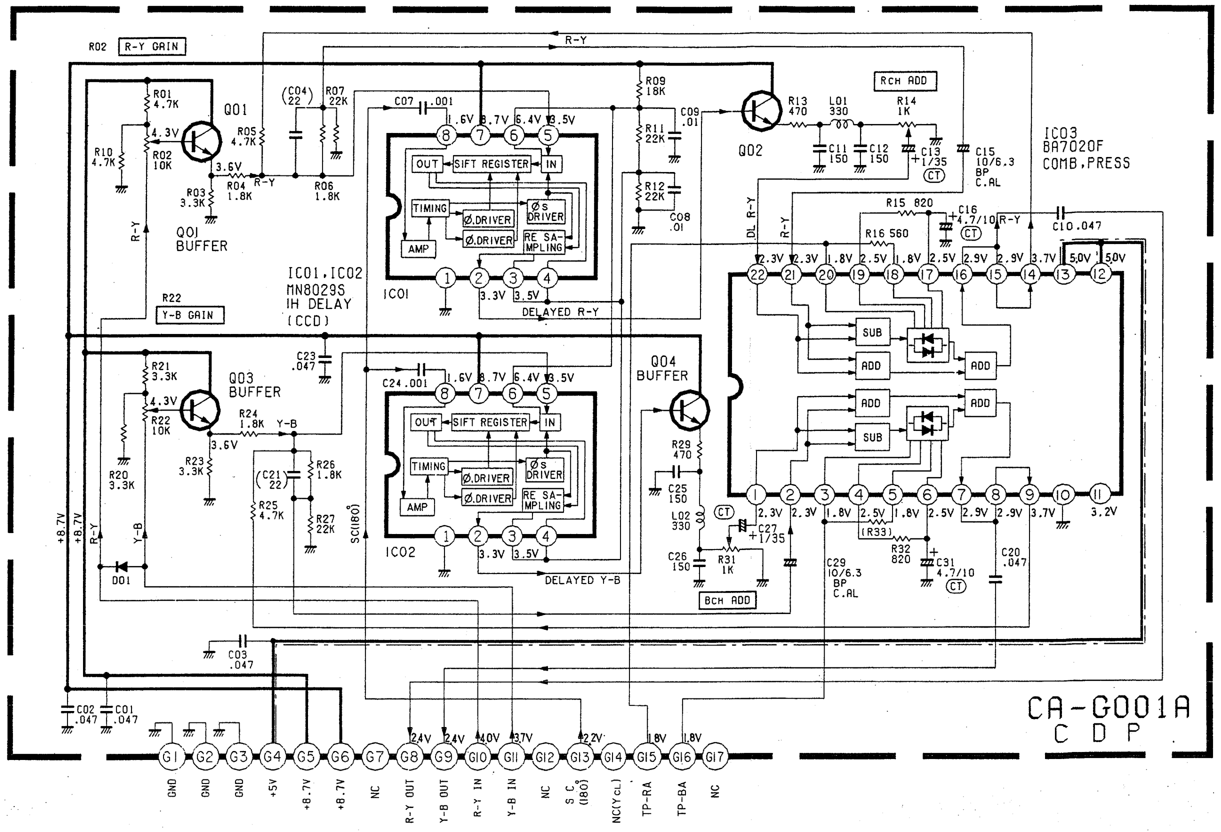
15-1 CIRCUIT DIAGRAM OF COLOR γ BOARD Ⓕ

- CA-F001A


IC01
M51264P
COLOR γ
Q03,Q04
Y-B COLOR DIFFERENTIAL
AMP.
Q01,Q02
R-Y COLOR
DIFFERENTIAL
AMP.
B-GAIN
R-GAIN
G-IN GAIN
CA-F001A
COLOR γ
TO & FROM MOTHER BOARD
GND
+5V
+8.7V
CP
R IN
G IN (CL)
B IN
R WB CTL.
B WB CTL.
R-Y OUT
Y-B OUT
TP-B
TP-R
TP-G
YCL IN
NC
NC

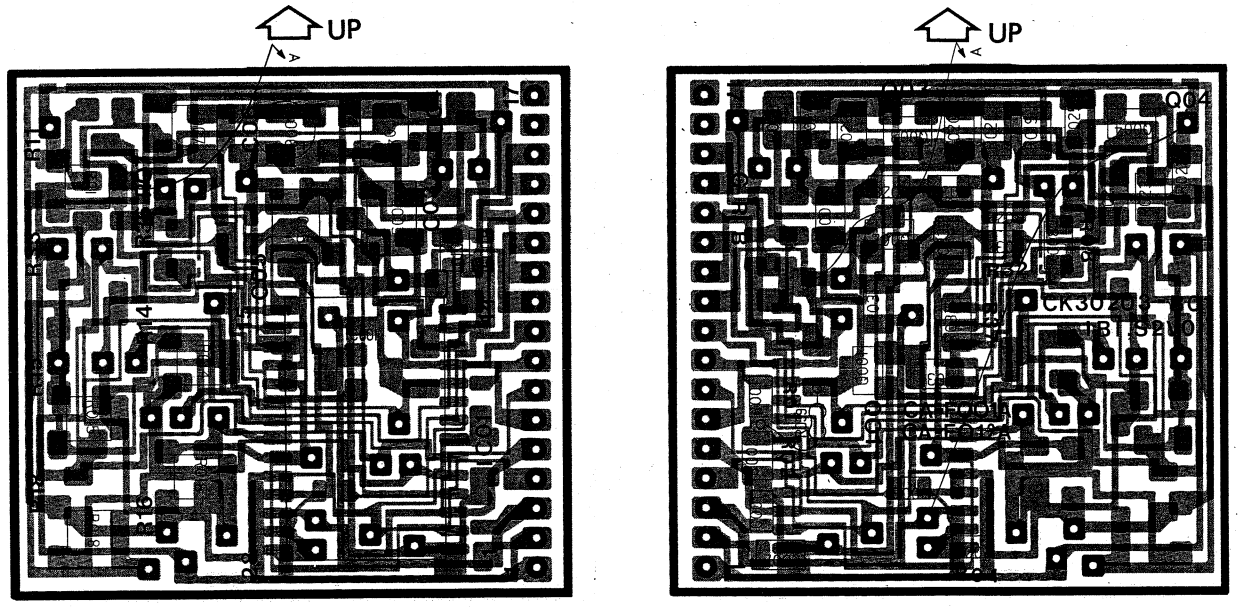
16-1 CIRCUIT DIAGRAM OF CDP BOARD Ⓖ

- CA-G001A


R-Y GAIN
Y-B GAIN
Q01
BUFFER
Q02
Q03
BUFFER
Q04
BUFFER
IC01, IC02
MN8029S
1H DELAY
(CCD)
IC03
BA7020F
COMB.PRESS
RCH ADD
BCH ADD
DELAYED R-Y
DELAYED Y-B
CA-G001A
C D P
GND
GND
GND
+5V
+8.7V
+8.7V
NC
R-Y OUT
Y-B OUT
R-Y IN
Y-B IN
NC
S.C (80)
NC(Ycl)
TP-RA
TP-BA
NC

15-2 BOARD DIAGRAM OF COLOR γ BOARD Ⓕ

- CA-F001A

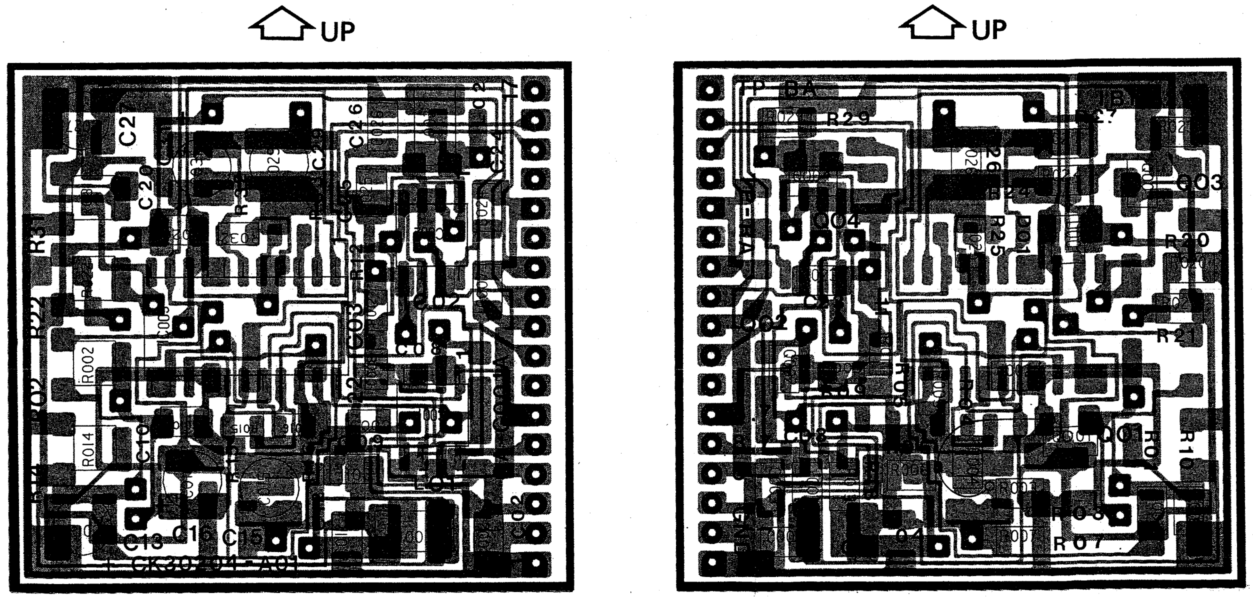

TOP VIEW BOTTOM VIEW

▇ Top side pattern of PC BOARD.

▇ Bottom side pattern of PC BOARD.

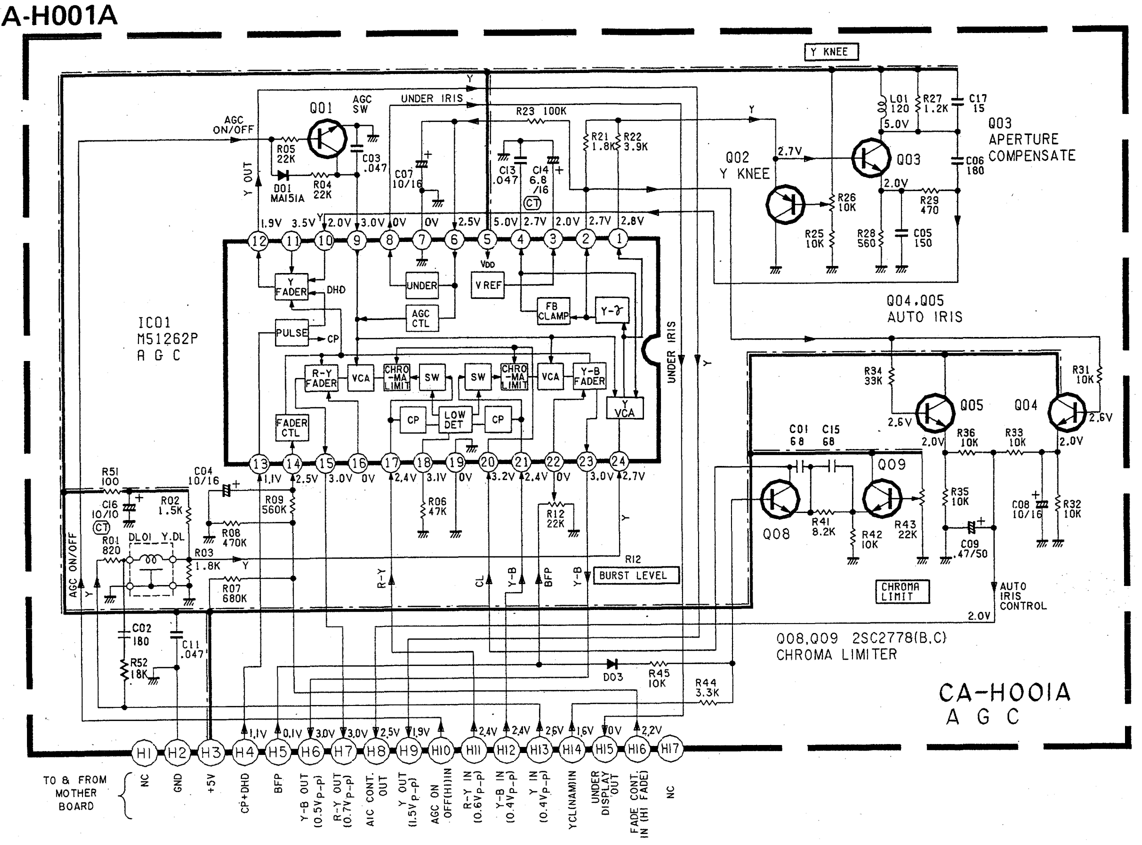
16-2 BOARD DIAGRAM OF CDP BOARD Ⓖ

- CA-G001A


TOP VIEW BOTTOM VIEW

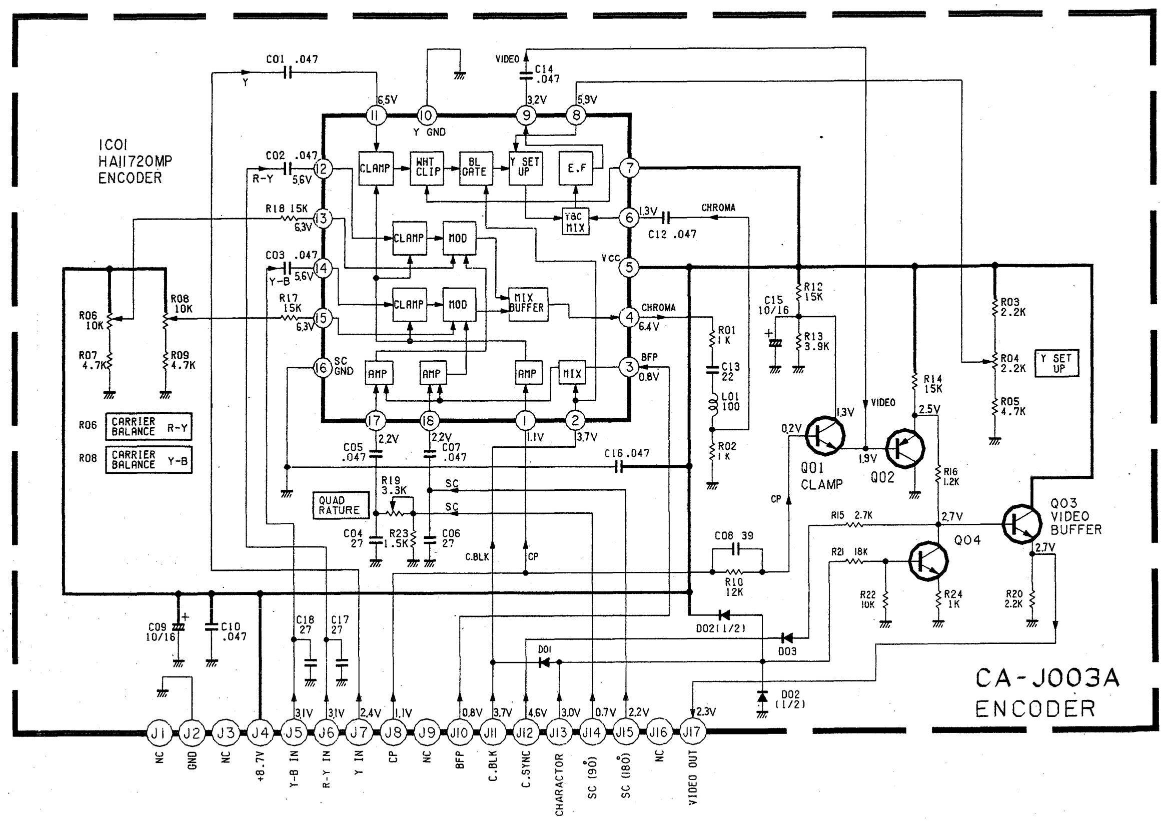
17-1 CIRCUIT DIAGRAM OF AGC BOARD Ⓗ

- CA-H001A


IC01
M51262P
AGC
Q01 AGC SW
UNDER IRIS
Y KNEE
Q02 Y KNEE
Q03 APERTURE COMPENSATE
Q04,Q05 AUTO IRIS
Q08,Q09 2SC2778(B,C) CHROMA LIMITER
BURST LEVEL
CHROMA LIMIT
AUTO IRIS CONTROL
CA-H001A
A G C
TO & FROM MOTHER BOARD
H1 NC
H2 GND
H3 +5V
H4 CP+DHD
H5 BFP
H6 Y-B OUT (0.5Vp-p)
H7 R-Y OUT (0.7Vp-p)
H8 AIC CONT. OUT
H9 Y OUT (1.5Vp-p)
H10 AGC ON OFF(H)IN
H11 R-Y IN (0.6Vp-p)
H12 Y-B IN (0.4Vp-p)
H13 Y IN (0.4Vp-p)
H14 YCLINAMIN
H15 UNDER DISPLAY OUT
H16 FADE CONT. IN (H: FADE)
H17 NC

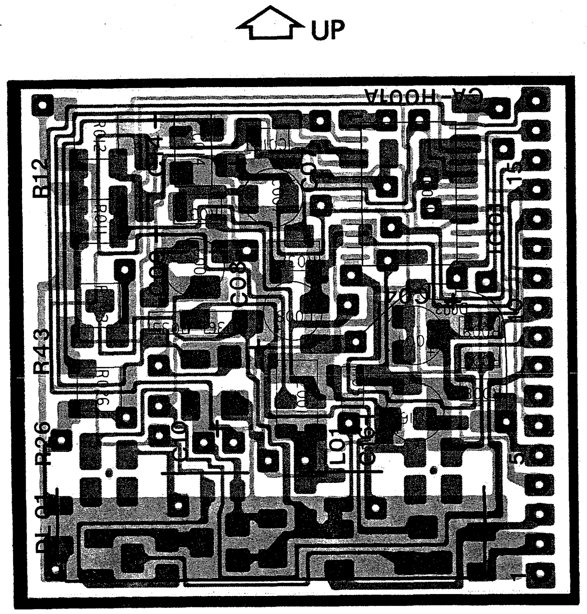
18-1 CIRCUIT DIAGRAM OF ENCODER BOARD Ⓙ

- CA-J003A

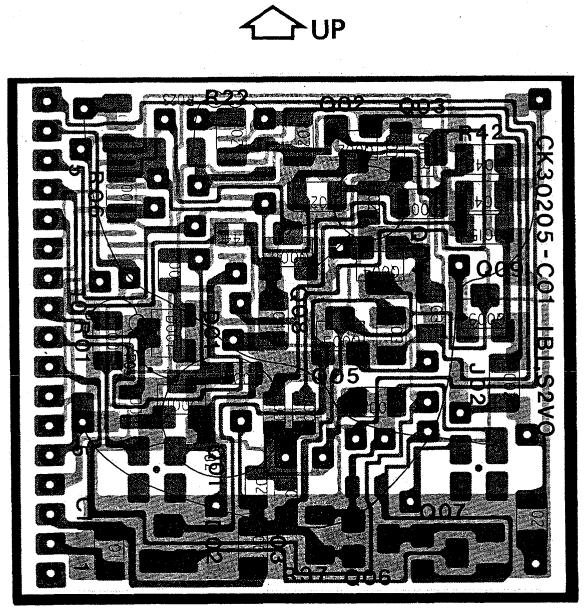

IC01
HA11720MP
ENCODER
CLAMP
WHT CLIP
BL GATE
Y SET UP
E.F
MOD
MIX BUFFER
AMP
MIX
CARRIER BALANCE R-Y
CARRIER BALANCE Y-B
QUAD RATURE
Q01 CLAMP
Q02
Q03 VIDEO BUFFER
Q04
CHROMA
VIDEO
Y SET UP
CA-J003A
ENCODER
J1 NC
J2 GND
J3 NC
J4 +8.7V
J5 Y-B IN
J6 R-Y IN
J7 Y IN
J8 CP
J9 NC
J10 BFP
J11 C.BLK
J12 C.SYNC
J13 CHARACTOR
J14 SC (90)
J15 SC (180)
J16 NC
J17 VIDEO OUT

17-2 BOARD DIAGRAM OF AGC BOARD Ⓗ

- CA-H001A



TOP VIEW


UP
CK30205-C01-IBIS2V0

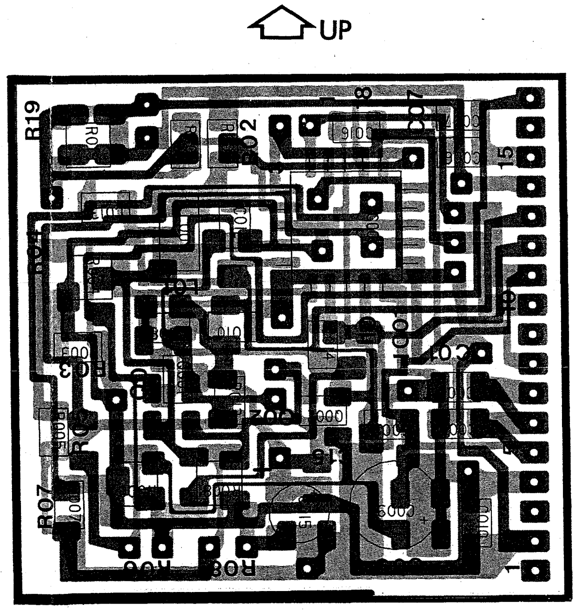
BOTTOM VIEW

▨ Top side pattern of PC BOARD.

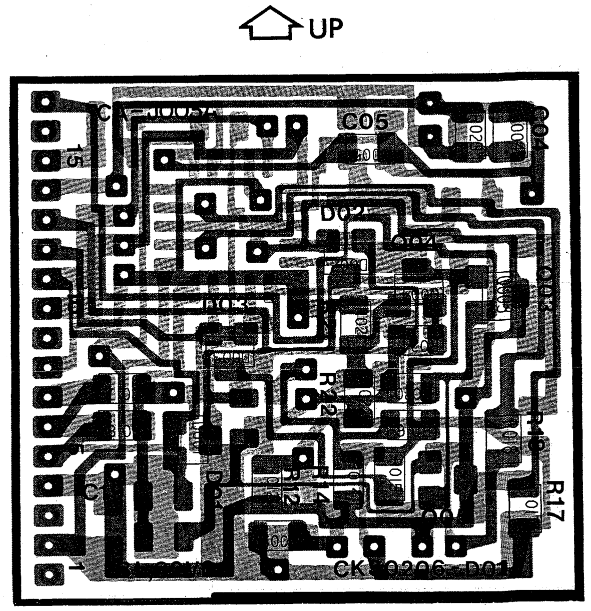
■ Bottom side pattern of PC BOARD.

18-2 BOARD DIAGRAM OF ENCODER BOARD Ⓙ

- CA-J003A



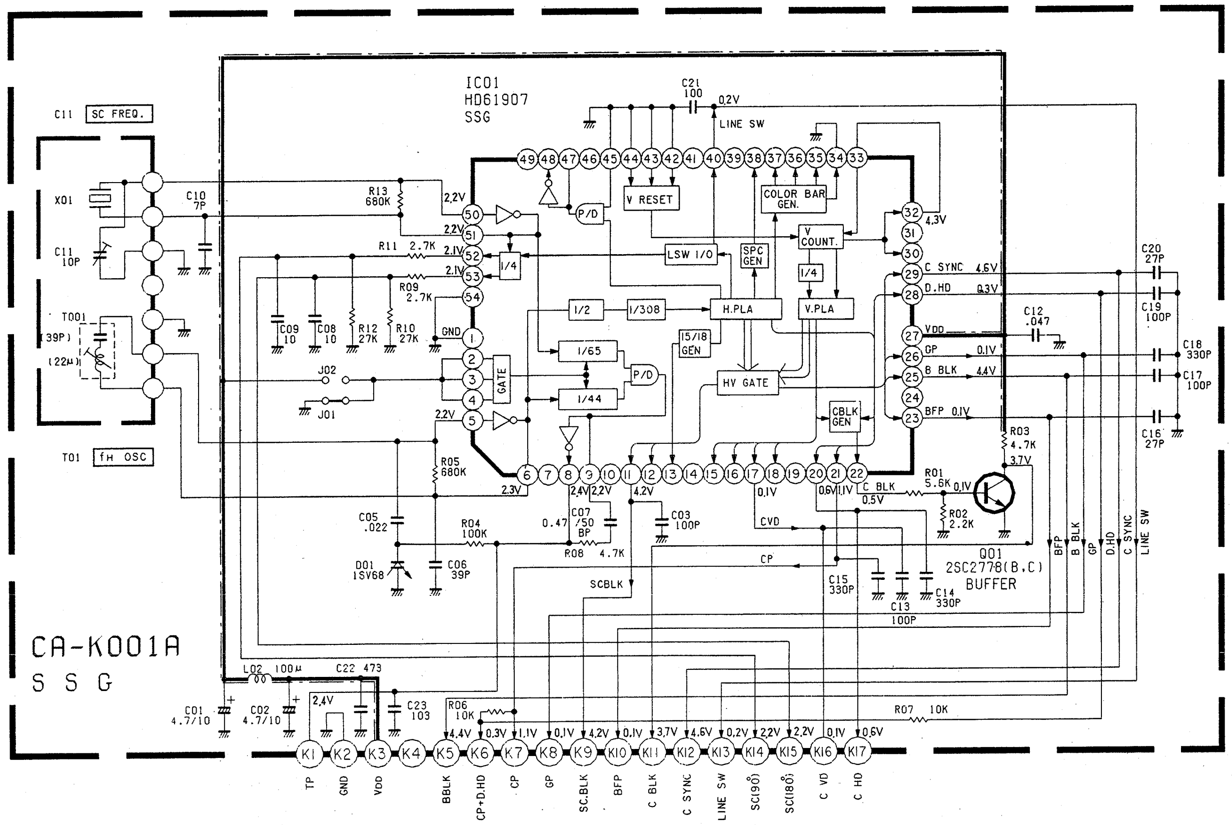
TOP VIEW


UP
C05
CK30206-D01

BOTTOM VIEW

19-1 CIRCUIT DIAGRAM OF SSG BOARD Ⓚ

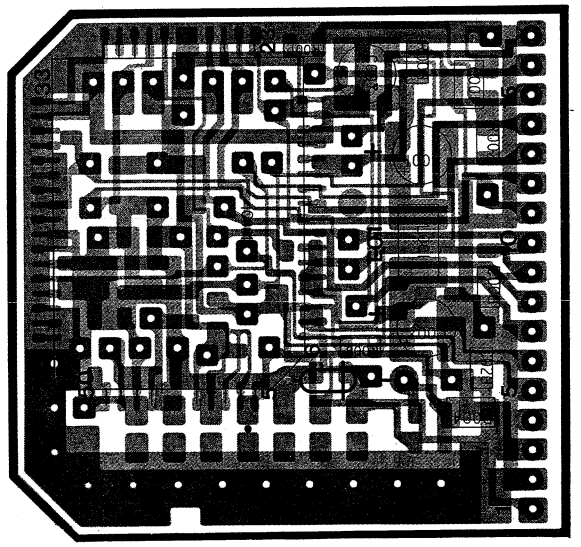
- CA-K001A


IC01 HD61907 SSG
C21 100 0.2V
LINE SW
C11 SC FREQ.
X01
C10 7P
C11 10P
T001 (39P) (22μH)
T01 fH OSC
R13 680K
R11 2.7K
R09 2.7K
C09 10
C08 10
R12 27K
R10 27K
J02
J01
V RESET
COLOR BAR GEN.
P/D
V COUNT.
LSW I/O
SPC GEN
1/4
1/2
1/308
H.PLA
V.PLA
1/65
15/18 GEN
1/44
HV GATE
CBLK GEN
GATE
C SYNC 4.6V
D.HD 4.3V
VDD
GP 0.1V
B BLK 4.4V
BFP 0.1V
C20 27P
C19 100P
C18 330P
C17 100P
C16 27P
C12 .047
R03 4.7K
R01 5.6K
R02 2.2K
Q01 2SC2778(B,C) BUFFER
C05 .022
R05 680K
R04 100K
C07 /50 8P
R08 4.7K
C03 100P
D01 1SV68
C06 39P
SCBLK
CP
CVD
C15 330P
C13 100P
C14 330P
CA-K001A SSG
L02 100μ
C22 473
C01 4.7/10
C02 4.7/10
C23 103
R06 10K
R07 10K
K1 TP
K2 GND
K3 VDD
K4
K5 BBLK
K6 CP+D.HD
K7 CP
K8 GP
K9 SC.BLK
K10 BFP
K11 C BLK
K12 C SYNC
K13 LINE SW
K14 SC(90)
K15 SC(80)
K16 C VD
K17 C HD

19-2 BOARD DIAGRAM OF SSG BOARD Ⓚ

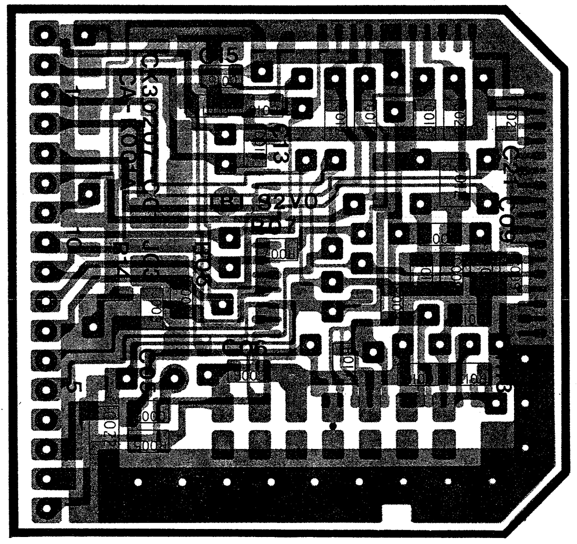
- CA-K001A

UP

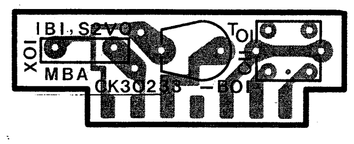


TOP VIEW

UP

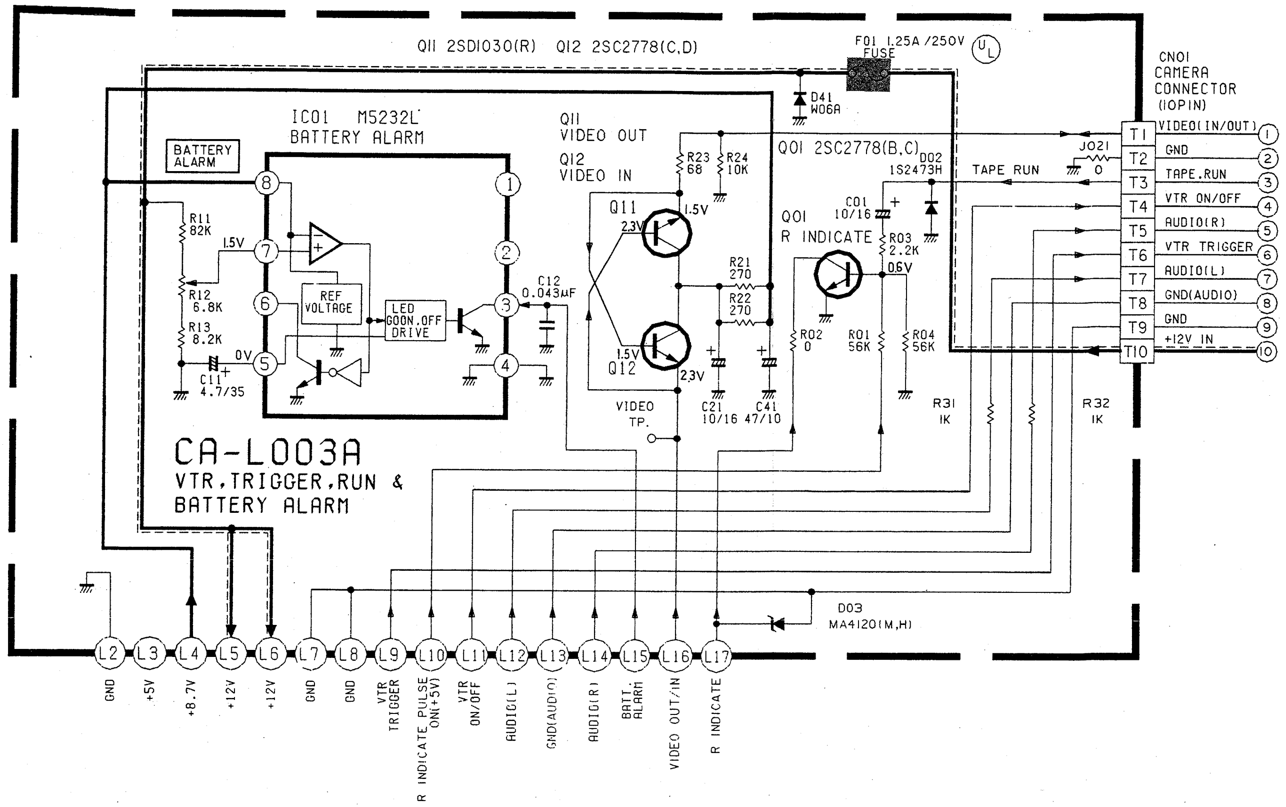


BOTTOM VIEW


IBI S2VO
MBA
CK302
T01
10X

20-1 CIRCUIT DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ

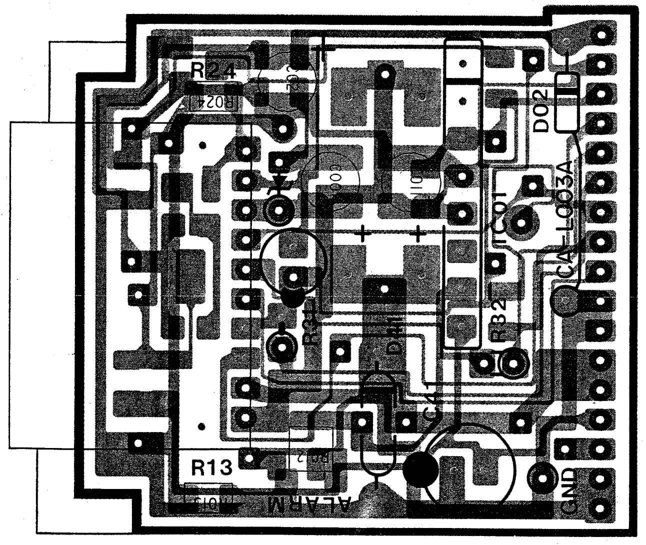
- CA-L003A


Q11 2SD1030(R) Q12 2SC2778(C,D)
F01 1.25A/250V FUSE
D41 W06A
CN01 CAMERA CONNECTOR (10PIN)
T1 VIDEO(IN/OUT) ①
T2 GND ②
T3 TAPE.RUN ③
T4 VTR ON/OFF ④
T5 AUDIO(R) ⑤
T6 VTR TRIGGER ⑥
T7 AUDIO(L) ⑦
T8 GND(AUDIO) ⑧
T9 GND ⑨
T10 +12V IN ⑩
IC01 M5232L BATTERY ALARM
BATTERY ALARM
Q11 VIDEO OUT
Q12 VIDEO IN
R23 68
R24 10K
Q01 2SC2778(B,C)
D02 1S2473H
J021 0
TAPE RUN
C01 10/16
R03 2.2K
Q01 R INDICATE
R11 82K
R12 6.8K
R13 8.2K
C11 4.7/35
REF VOLTAGE
LED ON.OFF DRIVE
C12 0.043μF
R21 270
R22 270
VIDEO TP.
C21 10/16
C41 47/10
R02 0
R01 56K
R04 56K
R31 1K
R32 1K
CA-L003A VTR,TRIGGER,RUN & BATTERY ALARM
D03 MA4120(M,H)
L2 GND
L3 +5V
L4 +8.7V
L5 +12V
L6 +12V
L7 GND
L8 GND
L9 VTR TRIGGER
L10 R INDICATE PULSE ON(+5V)
L11 VTR ON/OFF
L12 AUDIO(L)
L13 GND(AUDIO)
L14 AUDIO(R)
L15 BATT. ALARM
L16 VIDEO OUT/IN
L17 R INDICATE

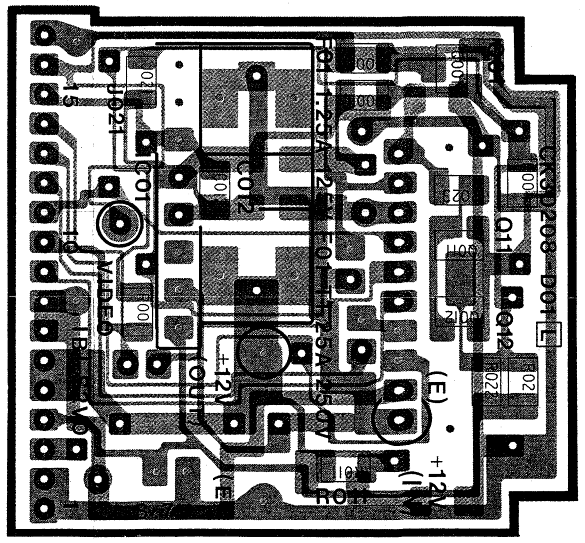
20-2 BOARD DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ

- CA-L003A

UP



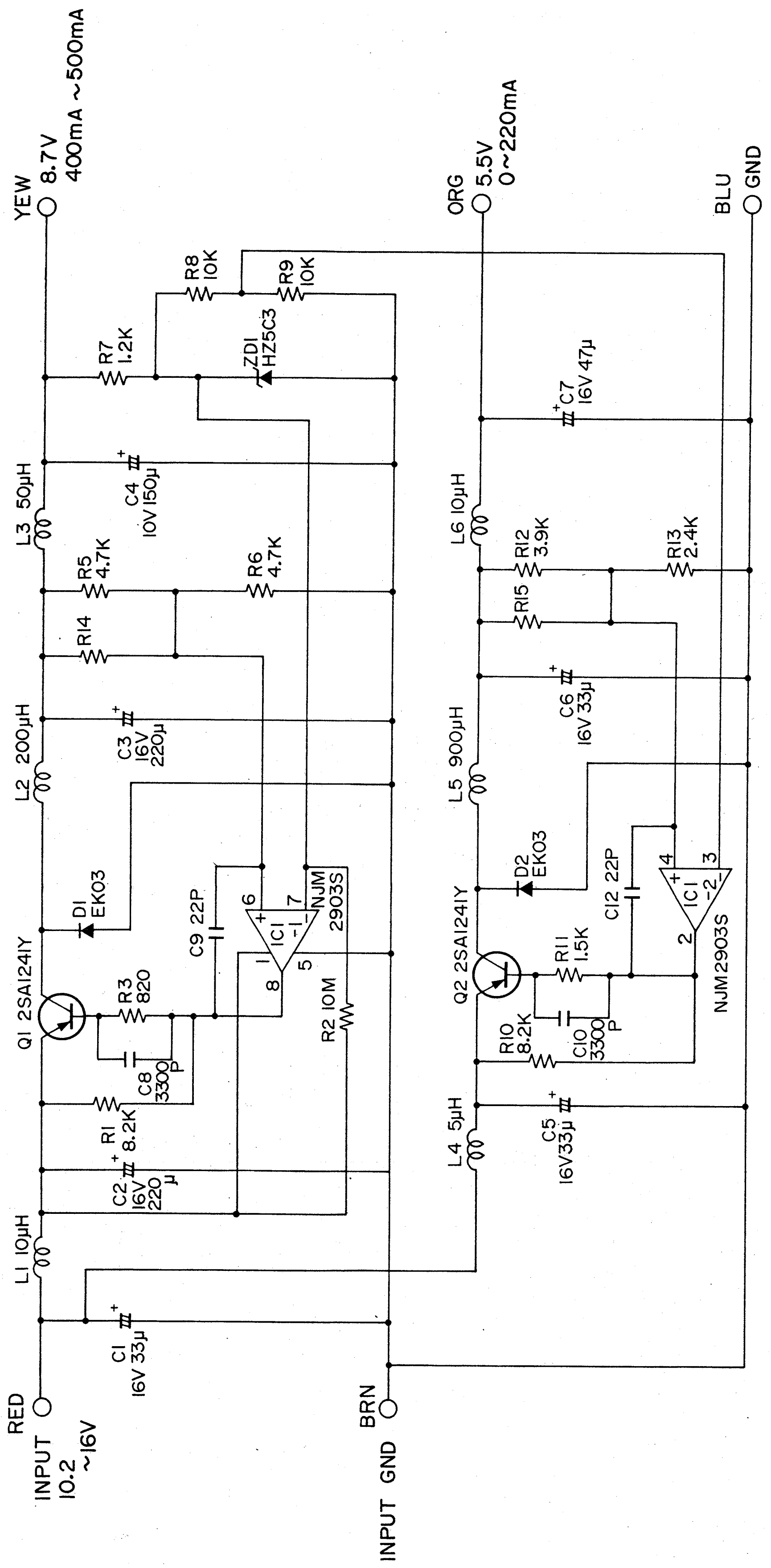
TOP VIEW



BOTTOM VIEW

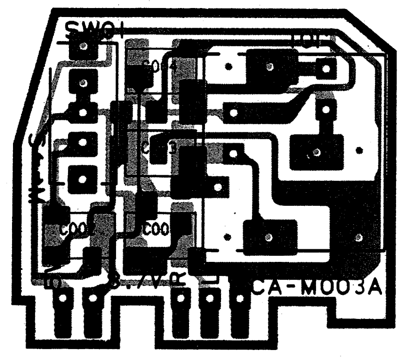
21 CIRCUIT DIAGRAM OF SW. REGULATOR

- CE40687

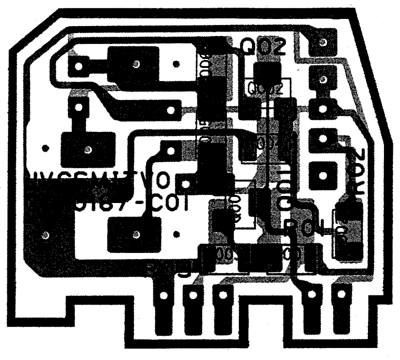

YEW 8.7V 400mA ~500mA
ORG 5.5V 0~220mA
BLU GND
R8 10K
R9 10K
R7 1.2K
ZD1 HZ5C3
C7 16V 47μ
C4 10V 150μ
L3 50μH
R5 4.7K
R6 4.7K
R14
L6 10μH
R12 3.9K
R13 2.4K
R15
C6 16V 33μ
C3 16V 220μ
L2 200μH
L5 900μH
D1 EK03
D2 EK03
C9 22P
C12 22P
IC1 NJM2903S
IC1 NJM2903S
Q1 2SA1241Y
Q2 2SA1241Y
R3 820
R11 1.5K
R2 10M
R10 8.2K
C10 3300P
C8 3300P
R1 8.2K
C2 16V 220μ
L4 5μH
C5 16V33μ
L1 10μH
C1 16V 33μ
RED
INPUT 10.2 ~16V
BRN
INPUT GND

22 BOARD DIAGRAM OF MIC BOARD

- CA-M003A

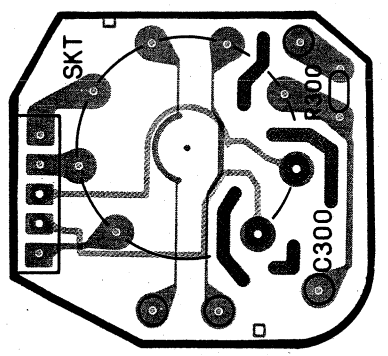

SW01
Q01
CA-M003A

TOP VIEW

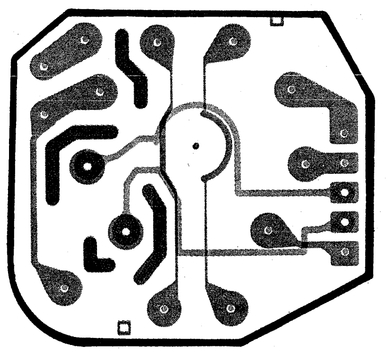


BOTTOM VIEW

23 BOARD DIAGRAM OF TUBE SOCKET BOARD


SKT
R300
C300

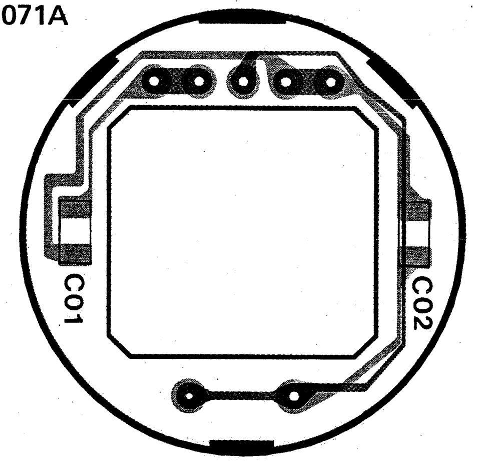
TUBE SIDE



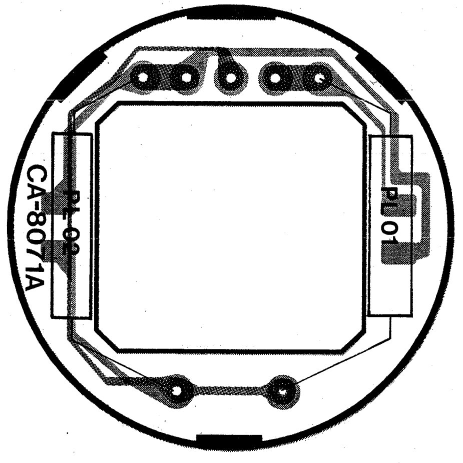
BOTTOM SIDE

24 BOARD DIAGRAM OF BIAS LIGHT BOARD

- CA-8071A



TOP VIEW

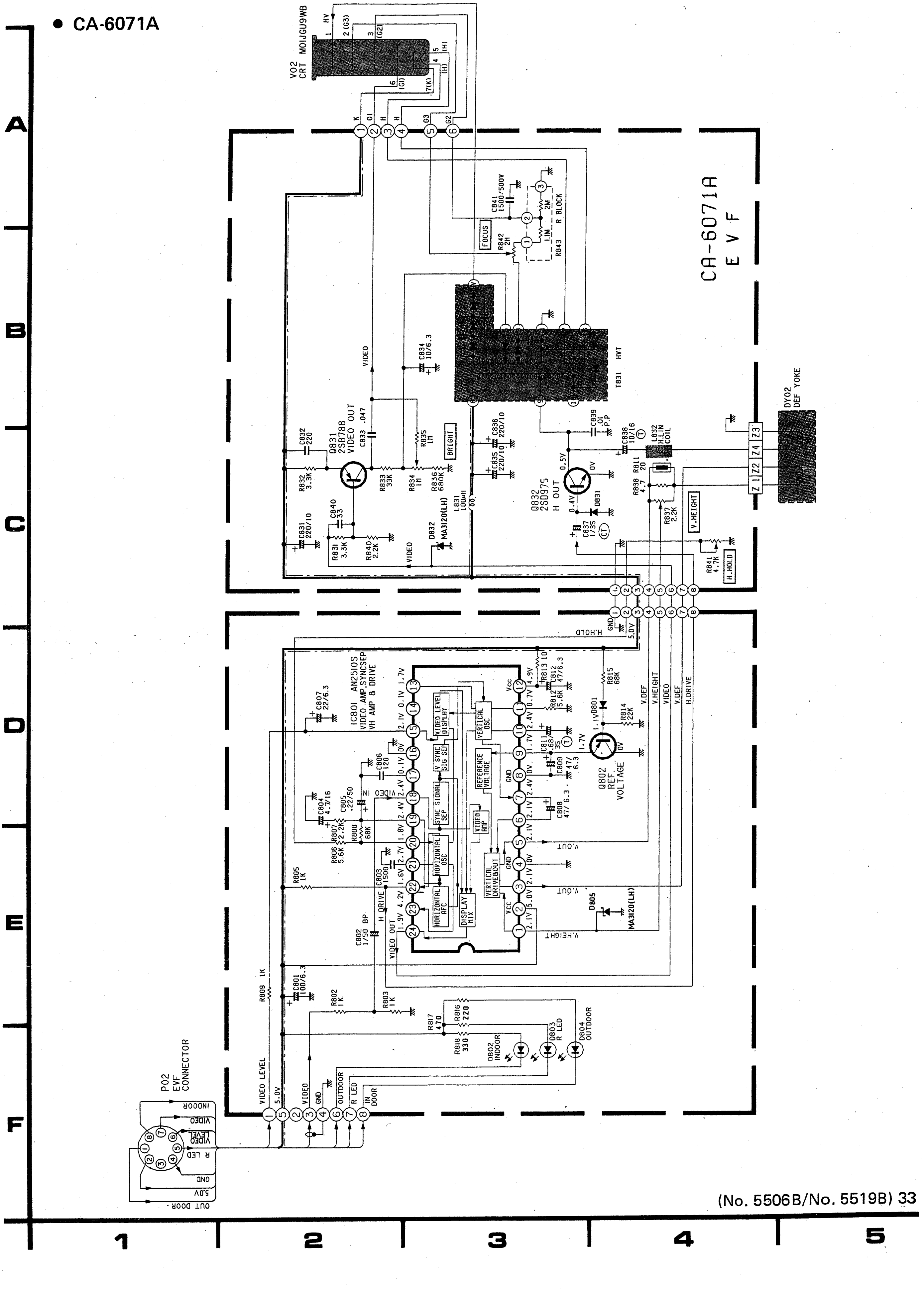

CA-8071A
PL02
PL01

BOTTOM VIEW

▨ Top side pattern of PC BOARD.
■ Bottom side pattern of PC BOARD.

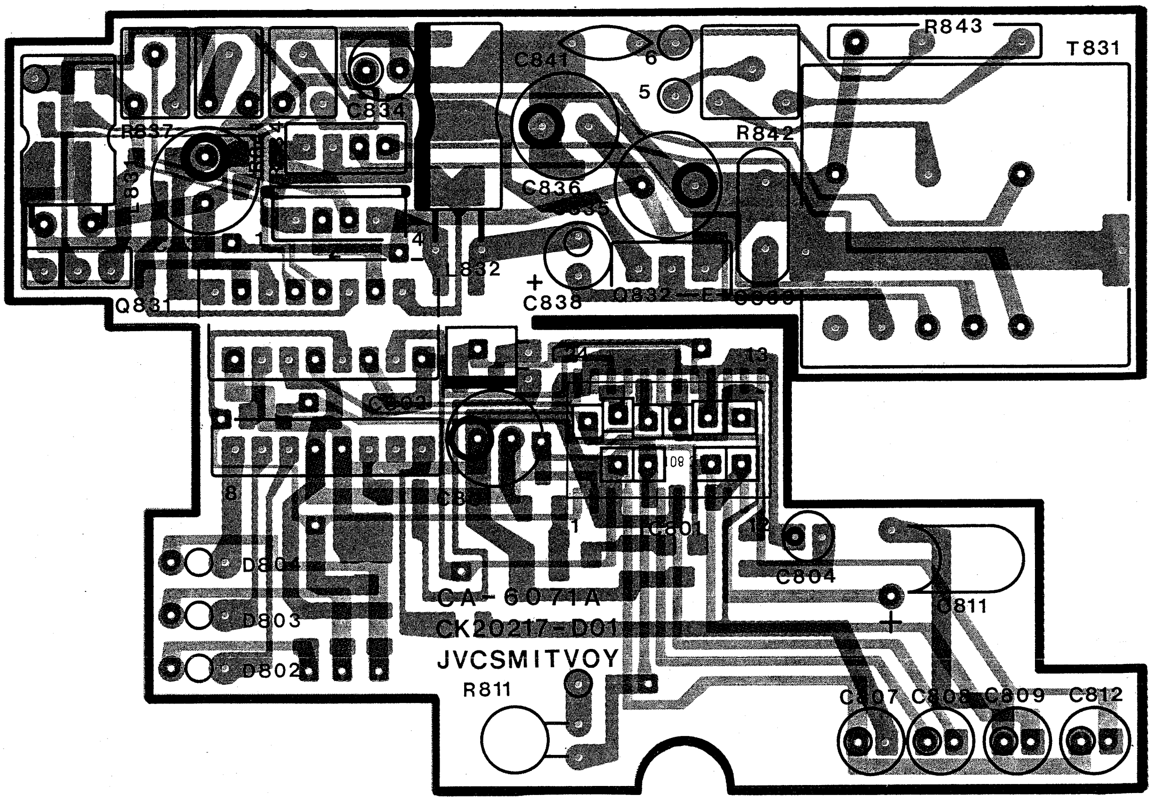
25-1 CIRCUIT DIAGRAM OF EVF

- CA-6071A

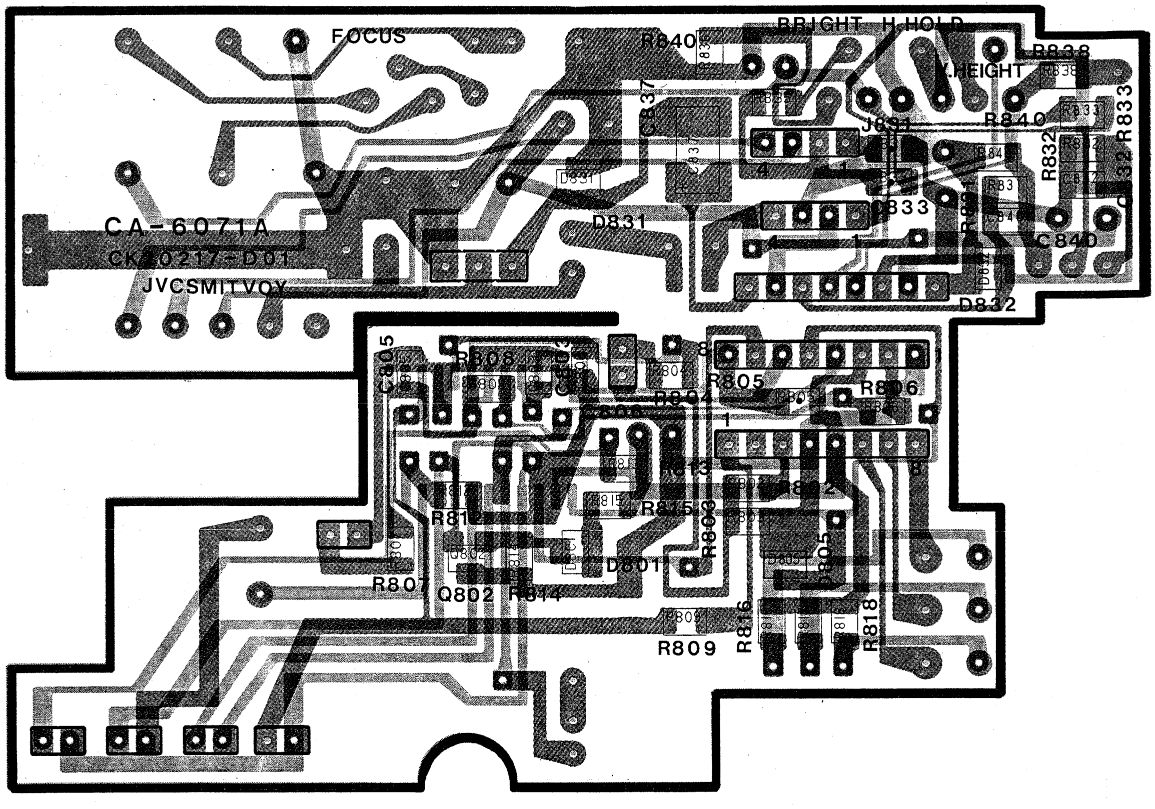

V02 CRT M01JGU9WB
1 HV
2 (G3)
3 (G2)
4 (H)
5 (H)
6 (G1)
7(K)
K G1 H H G3 G2
CA-6071A
E V F
C841 1500/500V
R BLOCK
R843 1.1M
2M
R842 2H
FOCUS
T831 HVT
C834 10/6.3
VIDEO
Q831 2SB788 VIDEO OUT
C832 220
C833 .047
R832 3.3K
R833 33K
R834 1M
R835 1M
R836 680K
BRIGHT
C836 220/10
C835 220/10
L831 100μH
C840 33
C831 220/10
R831 3.3K
R840 2.2K
D832 MA3120(LH)
C839 .01 P.P
C838 10/16
L832 H.LIN COIL
R811 20
R838 4.7
R837 2.2K
V.HEIGHT
Q832 2SD975 H OUT
D831
C837 1/35
0.5V 0V 0.4V
DY02 DEF YOKE
Z1 Z2 Z4 Z3
R841 4.7K
H.HOLD
GND 5.0V
H.HOLD
V.DEF V.HEIGHT VIDEO V.DEF H.DRIVE
IC801 AN2510S VIDEO AMP, SYNCSEP VH AMP & DRIVE
C807 22/6.3
VIDEO LEVEL DISPLAY
VERTICAL OSC
V SYNC SIG SEP
REFERENCE VOLTAGE
SYNC SIGNAL SEP
VIDEO AMP
HORIZONTAL OSC
VERTICAL DRIVE&OUT
HORIZONTAL AFC
DISPLAY MIX
Vcc GND
R813 10
C812 47/6.3
R812 5.6K
R815 68K
R814 22K
D801
C811 68/35
C809 47/6.3
C808 47/6.3
Q802 REF. VOLTAGE
C806 120
C804 4.7/16
C805 22/50
R807 2.2K
R806 5.6K
R808 68K
C803 1500
R805 1K
C802 1/50 BP
H DRIVE
VIDEO OUT
V.OUT
V.HEIGHT
D805 MA3120(LH)
R809 1K
C801 100/6.3
R802 1K
R803 1K
R817 470
R816 220
R818 330
D802 INDOOR
D803 R LED
D804 OUTDOOR
VIDEO LEVEL 5.0V VIDEO GND OUTDOOR R LED IN DOOR
P02 EVF CONNECTOR
INDOOR VIDEO LEVEL VIDEO R LED GND 5.0V OUT DOOR
A B C D E F
1 2 3 4 5

25-2 BOARD DIAGRAM OF EVF

- CA-6071A


R843
T831
C841
6
5
C834
R837
R842
C836
C835
L832
C838
Q832
Q831
C802
C801
C804
C811
D804
D803
D802
CA-6071A
CK20217-D01
JVCSMITVOY
R811
C807
C808
C809
C812

TOP VIEW


FOCUS
R840
BRIGHT
H.HOLD
R838
V.HEIGHT
C837
J831
R840
R833
R832
C832
D831
D831
Q833
C840
CA-6071A
CK20217-D01
JVCSMITVOY
D832
C805
R808
R804
R805
R806
R813
R812
R815
R810
R803
D801
D805
R807
Q802
R814
R809
R816
R818

BOTTOM VIEW

▨ Top side pattern of PC BOARD.
■ Bottom side pattern of PC BOARD.

26 CIRCUIT DIAGRAM OF GX-N4U/UT

Components of **GX-N4U/UT** differ very little from those of **GX-N7U/UT**.
By referring to the following Table, use the components of **GX-N7U/UT** when they are mutually identical between the two models.

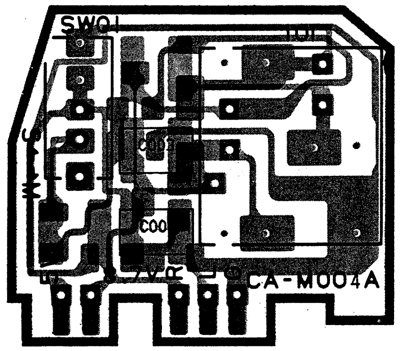
- **Boards employed on GX-N7U/UT and GX-N4U/UT**

Names of board modules and other components	BOARD NO.		REMARKS
	GX-N7U/UT	GX-N4U/UT	
MOTHER BOARD	**CA-1071B/C**	**CA-1073B**	See P. 39 ~ P. 42
PRE-AMP.	CA-2071A	CA-2071A	
AUDIO BOARD	**CA-A003A/A005A**	**CA-A004A**	See P. 43
PRE-PROCESS BOARD	CA-B001A	CA-B001A	
CARRIER MATRIX BOARD	CA-C001A	CA-C001A	
DETECTOR BOARD	CA-D001A	CA-D001A	
BLACK SET/ AUTO WHITE BOARD	**CA-E004A/E005A**	**CA-E003A**	See P. 44
COLOR γ BOARD	CA-F001A	CA-F001A	
CDP BOARD	CA-G001A	CA-G001A	
AGC BOARD	CA-H001A	CA-H001A	
ENCODER BOARD	CA-J003A	CA-J001A	
SSG BOARD	CA-K001A	CA-K001A	
VTR TRIGGER, RUN & BATTERY ALARM BOARD	CA-L003A	CA-L001A	
MIC BOARD	**CA-M003A**	**CA-M004A**	See P. 36
SW. REGULATOR	CE40687	CE40687	
EVF	CA-6071A	CA-6071A	
LENS	**CLC02206-B-BFZ**	**CLC03206-A-B**	

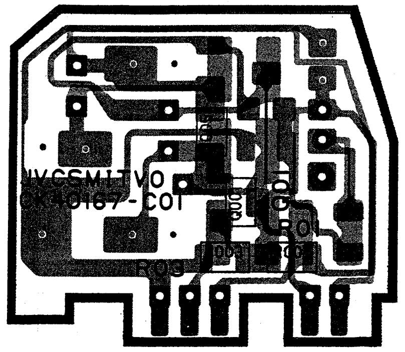
As to board modules that differ from those of **GX-N7U/UT**, refer to those pages indicated in the "REMARKS" column.

27 BOARD DIAGRAM OF MIC BOARD

- CA-M004A



TOP VIEW

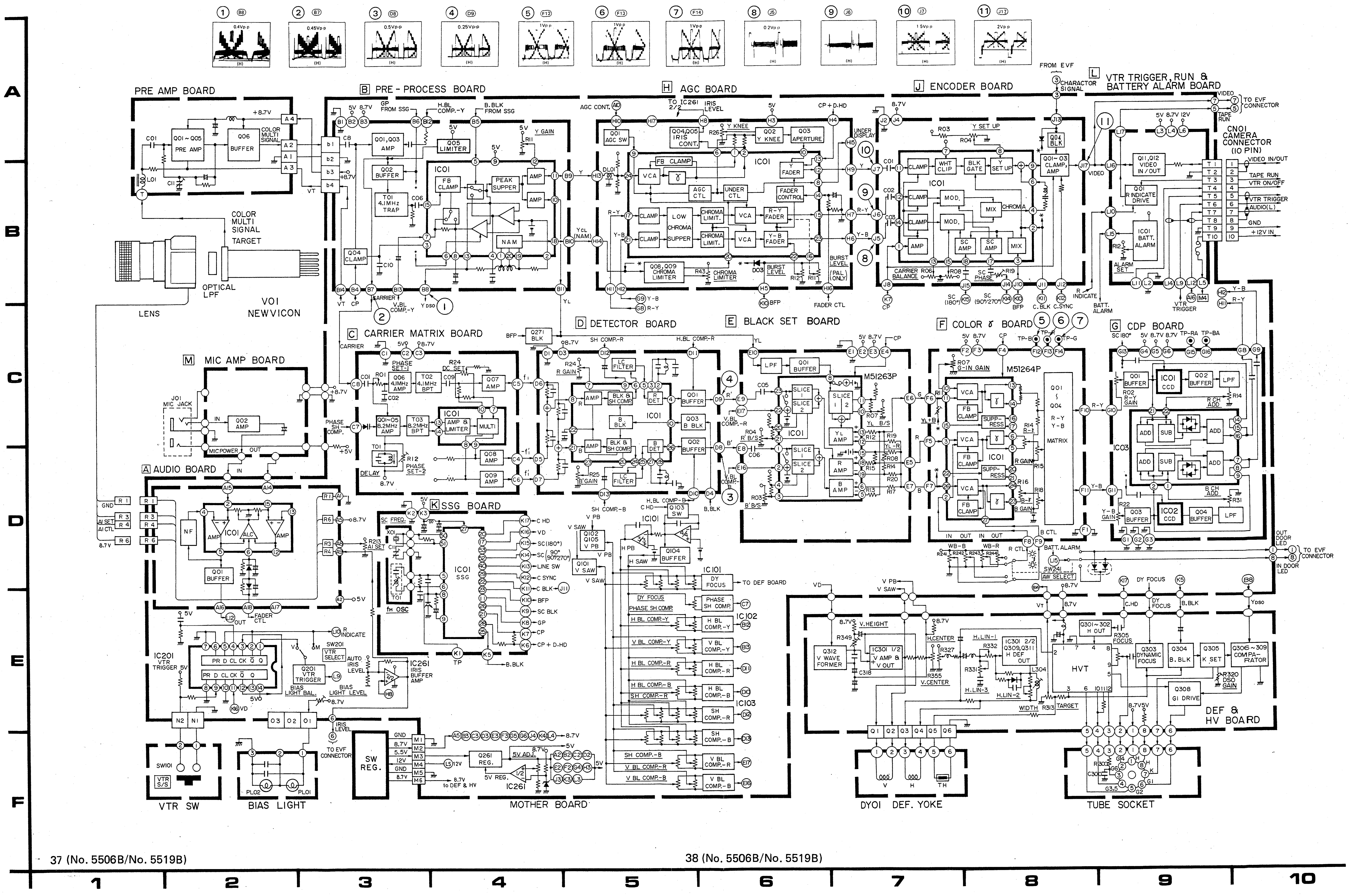


BOTTOM VIEW

* As to the circuit diagram, refer to the " Circuit diagram of mother board (CA-1073B)."

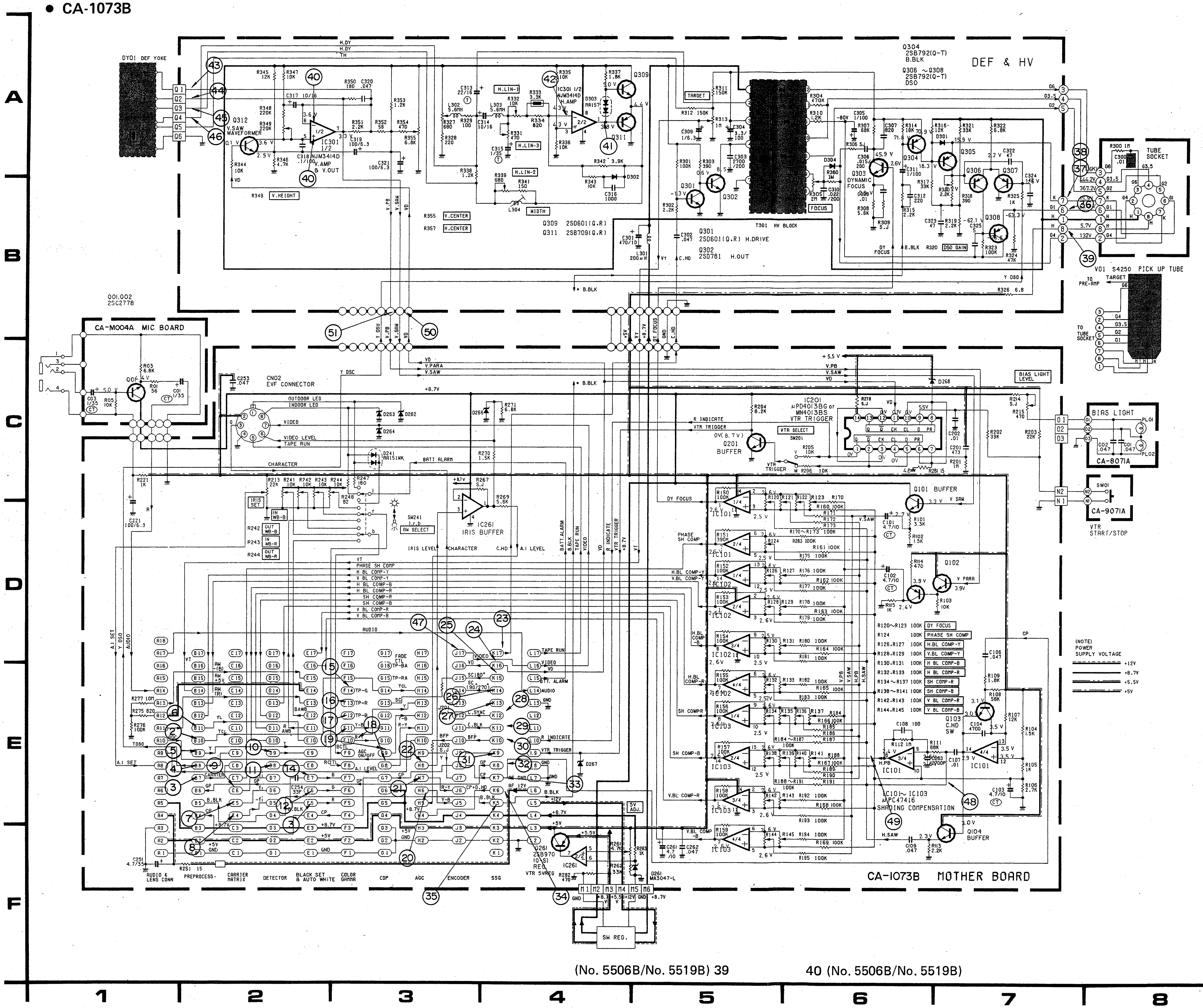
▨ Top side pattern of PC BOARD.
▨ Bottom side pattern of PC BOARD.

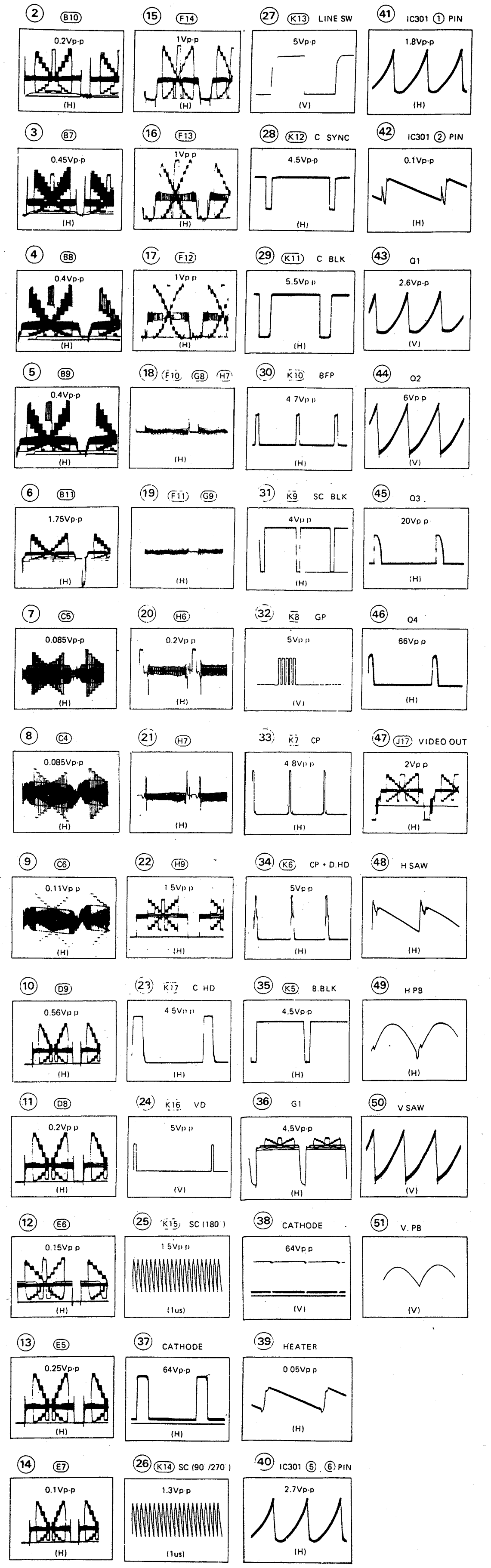
28 BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N4U/UT)


① B8 0.4Vp-p
② B7 0.45Vp-p
③ D8 0.5Vp-p
④ D9 0.25Vp-p
⑤ F12 1Vp-p
⑥ F13 1Vp-p
⑦ F14 1Vp-p
⑧ J5 0.2Vp-p
⑨ J6
⑩ J7 1.5Vp-p
⑪ J17 2Vp-p
PRE AMP BOARD
Q01~Q05 PRE AMP
Q06 BUFFER
COLOR MULTI SIGNAL
COLOR MULTI SIGNAL TARGET
OPTICAL LPF
LENS
V01 NEWVICON
B PRE-PROCESS BOARD
Q01,Q03 AMP
Q02 BUFFER
T01 4.1MHz TRAP
Q04 CLAMP
Q05 LIMITER
IC01
FB CLAMP
PEAK SUPPER
NAM
Y GAIN
H AGC BOARD
AGC CONT.
Q01 AGC SW
Q04,Q05 IRIS CONT.
Q02 Y KNEE
Q03 APERTURE
FB CLAMP
VCA
AGC CTL
UNDER CTL
Y FADER
FADER CONTROL
CLAMP
LOW CHROMA SUPPER
CHROMA LIMIT.
R-Y FADER
Y-B FADER
Q08,Q09 CHROMA LIMITER
R43 CHROMA LIMITER
BURST LEVEL
FADER CTL
J ENCODER BOARD
CLAMP
WHT CLIP
BLK GATE
Y SET UP
MOD.
MIX
CHROMA
SC AMP
CARRIER BALANCE
SC PHASE
Q01~03 CLAMP, AMP
Q04 BLK
FROM EVF
CHARACTOR SIGNAL
L VTR TRIGGER, RUN & BATTERY ALARM BOARD
Q11,Q12 VIDEO IN/OUT
Q01 R INDICATE DRIVE
IC01 BATT. ALARM
ALARM SET
TO EVF CONNECTOR
CN01 CAMERA CONNECTOR (10 PIN)
VIDEO IN/OUT
TAPE RUN
VTR ON/OFF
VTR TRIGGER
AUDIO(L)
GND
+12V IN
C CARRIER MATRIX BOARD
Q06 4.1MHz AMP
T02 4.1MHz BPT
Q07 AMP
Q01~05 8.2MHz AMP
T03 8.2MHz BPT
IC01 AMP & LIMITER
MULTI
Q08 AMP
Q09 AMP
PHASE SET-1
PHASE SET-2
DELAY
M MIC AMP BOARD
J01 MIC JACK
Q02 AMP
MIC POWER
D DETECTOR BOARD
AMP
BLK & SH COMP
R DET
B BLK
B DET
LC FILTER
Q01 BUFFER
Q03 B BLK
Q02 BUFFER
R GAIN
B GAIN
E BLACK SET BOARD
LPF
Q01 BUFFER
M51263P
SLICE
YL AMP
R AMP
B AMP
IC01
YL B/S
R' B/S
B' B/S
F COLOR γ BOARD
M51264P
VCA
FB CLAMP
SUPPRESS
Q01~Q04 R-Y Y-B MATRIX
G-IN GAIN
R GAIN
B GAIN
G CDP BOARD
Q01 BUFFER
IC01 CCD
Q02 BUFFER
LPF
ADD
SUB
IC03
Q03 BUFFER
IC02 CCD
Q04 BUFFER
R CH ADD
B CH ADD
OUT DOOR LED
IN DOOR LED
TO EVF CONNECTOR
SW241 AW SELECT
BATT. ALARM
A AUDIO BOARD
NF
IC01
AMP
ALC
Q01 BUFFER
FADER CTL
K SSG BOARD
SC FREQ.
IC01 SSG
fH OSC
C HD
VD
SC(180°)
SC(90°/270°)
LINE SW
C SYNC
C BLK
BFP
SC BLK
GP
CP
CP+D.HD
B.BLK
TP
IC201 VTR TRIGGER
PR D CL CK Q Q
SW201 VTR SELECT
AUTO IRIS LEVEL
Q201 VTR TRIGGER
BIAS LIGHT BAL.
BIAS LIGHT LEVEL
IC261 IRIS BUFFER AMP
IRIS LEVEL
TO EVF CONNECTOR
SW REG.
Q261 REG.
5V ADJ.
5V REG.
IC261
to DEF & HV
Q101 V SAW
Q102 Q105 V PB
Q104 BUFFER
Q103 SW
IC101
DY FOCUS
PHASE SH COMP.
H BL COMP.-Y
V BL COMP.-Y
H BL COMP.-R
H BL COMP.-B
SH COMP.-R
SH COMP.-B
V BL COMP.-R
V BL COMP.-B
IC102
IC103
TO DEF BOARD
DEF & HV BOARD
Q312 V WAVE FORMER
IC301 1/2 V AMP & V OUT
V.HEIGHT
V.CENTER
H.CENTER
H.LIN-1
H.LIN-2
H.LIN-3
IC301 2/2 Q309,Q311 H DEF OUT
WIDTH
HVT
Q301~302 H OUT
Q303 DYNAMIC FOCUS
Q304 B.BLK
Q305 K SET
Q306~309 COMPARATOR
Q308 G1 DRIVE
DSO GAIN
FOCUS
TARGET
DY01 DEF. YOKE
V H TH
TUBE SOCKET
VTR SW
SW101 VTR S/S
BIAS LIGHT
PL02 PL01
MOTHER BOARD
GND 8.7V 5.5V 12V GND 8.7V
A B C D E F
1 2 3 4 5 6 7 8 9 10

29-1 CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N4U/UT)

- CA-1073B


A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
DY01 DEF YOKE
DEF & HV
T301 HV BLOCK
FOCUS
V.HEIGHT
H.LIN-1
H.LIN-2
H.LIN-3
WIDTH
V.CENTER
H.CENTER
TARGET
DY FOCUS
DSO GAIN
Q309 2SD601(Q.R)
Q311 2SB709(Q.R)
Q301 2SD601(Q.R) H.DRIVE
Q302 2SD781 H.OUT
Q304 2SB792(Q-T) B.BLK
Q306 ~Q308 2SB792(Q-T) DSO
IC301 NJM3414D
TUBE SOCKET
V01 S4250 PICK UP TUBE
TO PRE-AMP
TO TUBE SOCKET
CA-M004A MIC BOARD
Q01, Q02 2SC2778
CN02 EVF CONNECTOR
OUTDOOR LED
INDOOR LED
VIDEO
VIDEO LEVEL
TAPE RUN
CHARACTER
BATT ALARM
IRIS SET
IC261 IRIS BUFFER
SW241 RW SELECT
IC201 μPD4013BG or MN4013BS VTR TRIGGER
Q201 BUFFER
VTR SELECT
BIAS LIGHT LEVEL
BIAS LIGHT
CA-8071A
CA-9071A
VTR START/STOP
Q101 BUFFER
Q102
Q103 C.HD SW
Q104 BUFFER
IC101~IC103 μPC4741G SHADING COMPENSATION
R120~R123 100K DY FOCUS
R124 100K PHASE SH COMP
R126,R127 100K H.BL COMP-Y
R128,R129 100K V.BL COMP-Y
R130,R131 100K H BL COMP-B
R132,R133 100K H BL COMP-R
R134~R137 100K SH COMP-R
R138~R141 100K SH COMP-B
R142,R143 100K V BL COMP-B
R144,R145 100K V BL COMP-R
(NOTE) POWER SUPPLY VOLTAGE
+12V
+8.7V
+5.5V
+5V
IC261 2SB970 (Q.S) REG
VTR 5V REG
D261 MA3047-L
SW REG.
AUDIO & LENS CONN
PREPROCESS
CARRIER MATRIX
DETECTOR
BLACK SET & AUTO WHITE
COLOR GAMMA
CDP
AGC
ENCODER
SSG
CA-1073B MOTHER BOARD

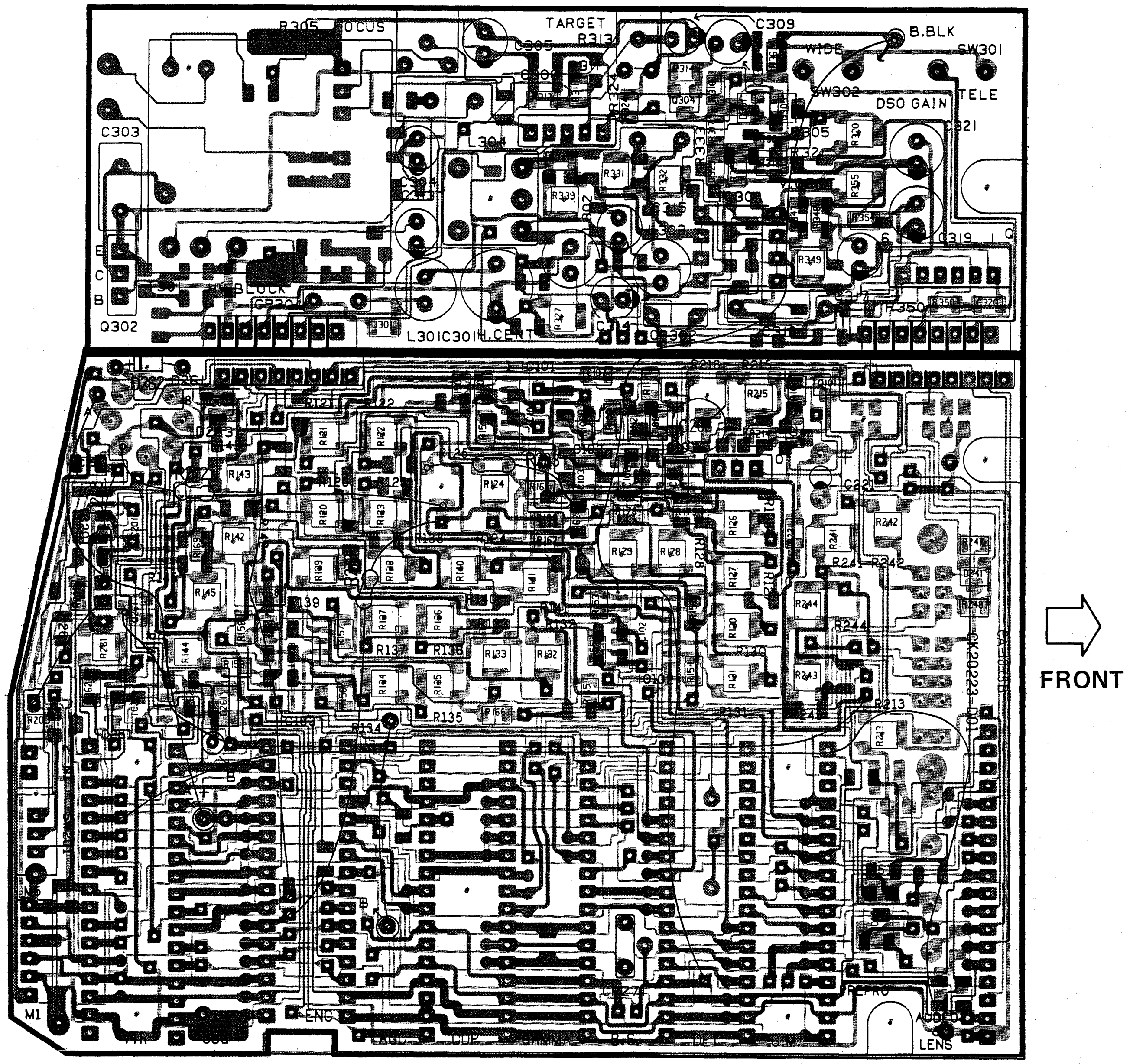


29-2 BOARD DIAGRAM OF MOTHER BOARD

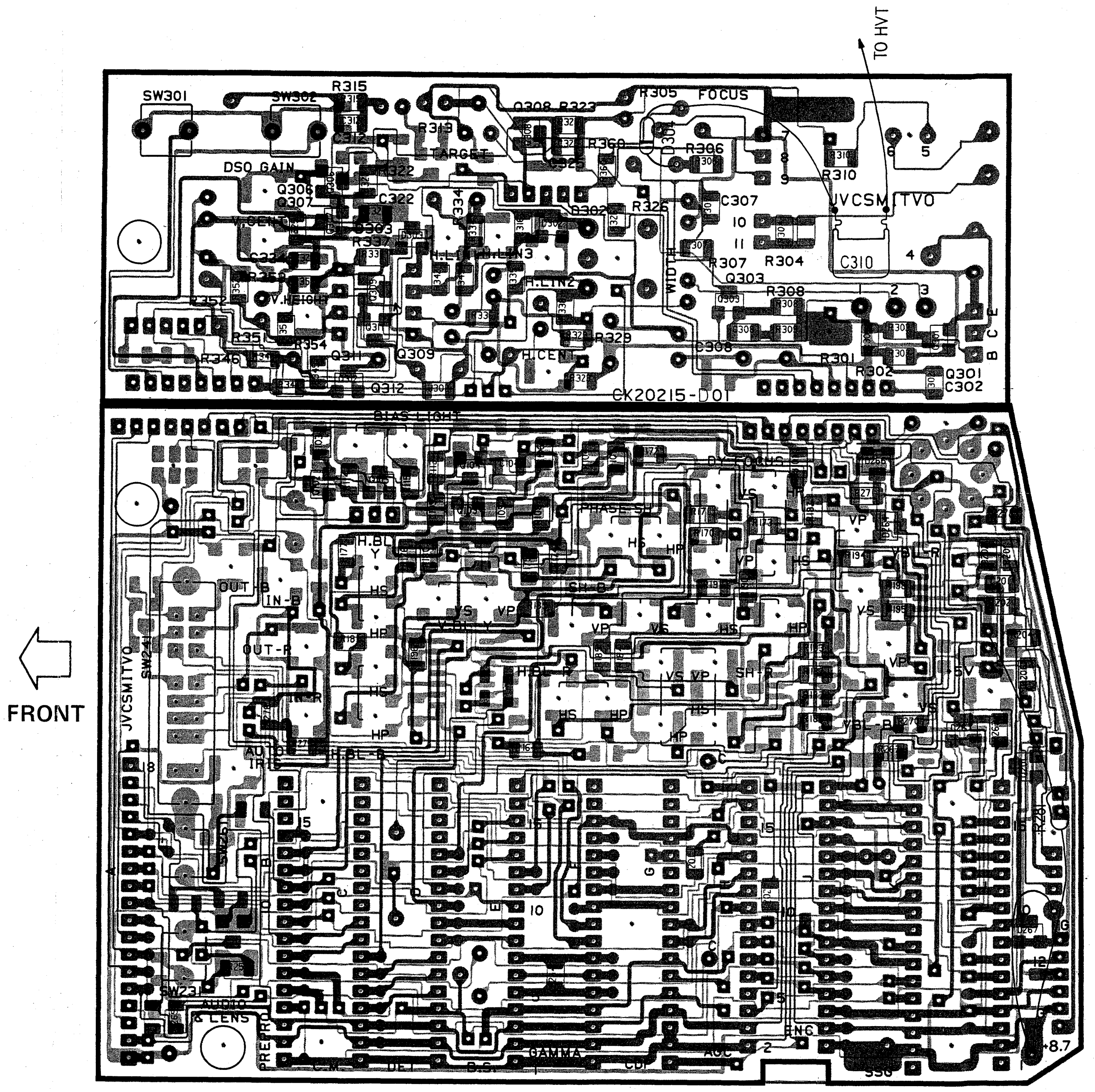
- CA-1073B

*Note: ■ Red color shows top side pattern of PC BOARD.

▒ Gray color shows bottom side pattern of PC BOARD.


R305
FOCUS
TARGET
C309
B.BLK
SW301
WIDE
SW302
DSO GAIN
TELE
C303
Q302
H.CENT
CK20223
FRONT

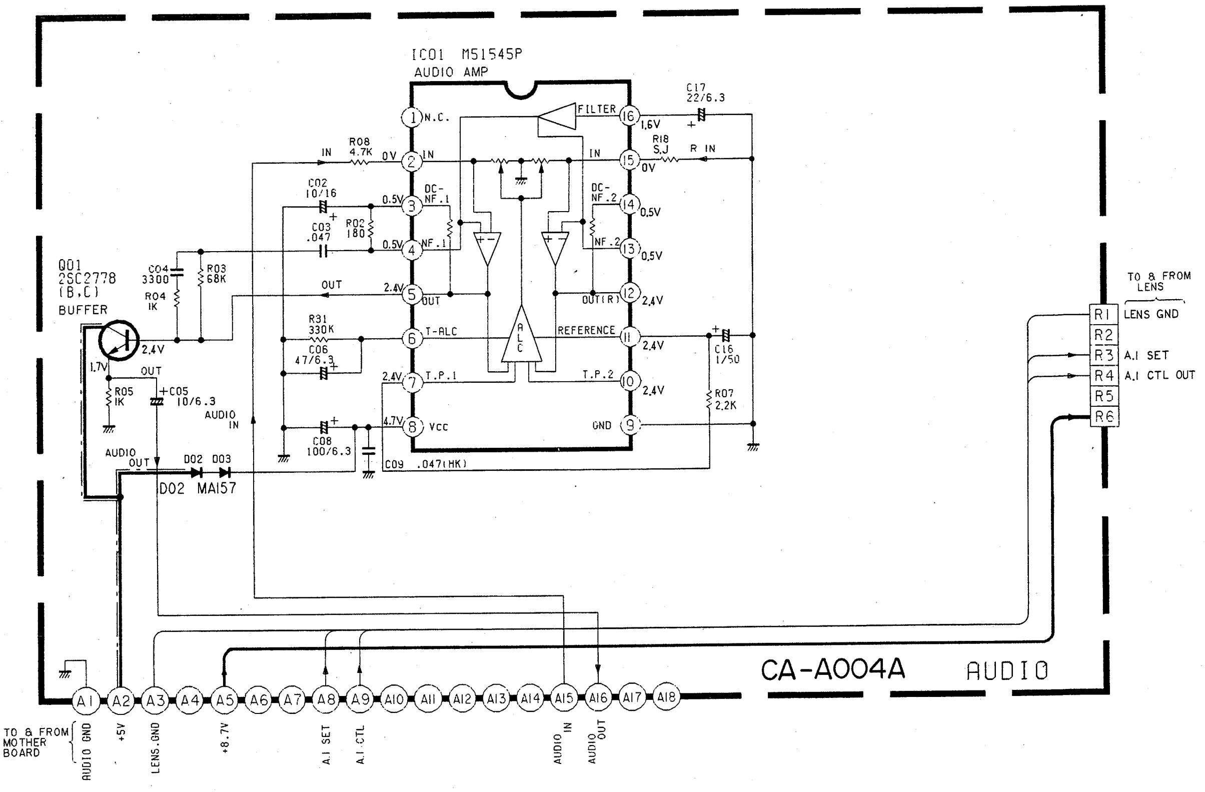
TOP VIEW


TO HVT
SW301
SW302
R315
R305
FOCUS
DSO GAIN
TARGET
JVCSMITVO
C310
Q301
C302
CK20215-D01
BIAS LIGHT
FRONT

BOTTOM VIEW

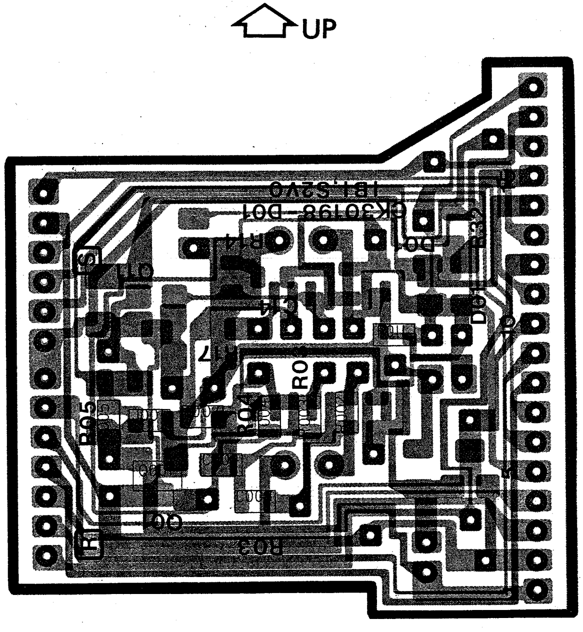
30-1 CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ

- CA-A004A

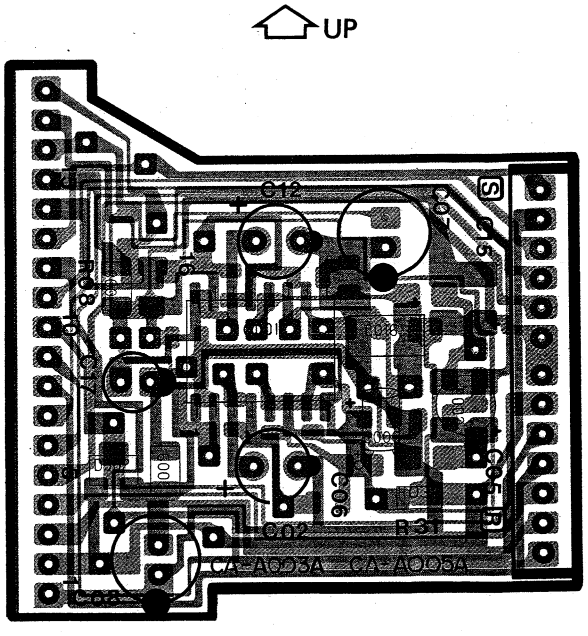

IC01 M51545P
AUDIO AMP
N.C.
FILTER
IN
DC-NF.1
NF.1
OUT
T-ALC
T.P.1
VCC
DC-NF.2
NF.2
OUT(R)
REFERENCE
T.P.2
GND
ALC
R08 4.7K
C02 10/16
R02 180
C03 .047
C04 3300
R03 68K
R04 1K
R31 330K
C06 47/6.3
C08 100/6.3
C09 .047(HK)
Q01 2SC2778 (B,C) BUFFER
R05 1K
C05 10/6.3
AUDIO IN
AUDIO OUT
D02 D03
D02 MA157
C17 22/6.3
R18 S.J
R IN
C16 1/50
R07 2.2K
0V
0.5V
2.4V
4.7V
1.6V
1.7V
TO & FROM LENS
R1 LENS GND
R2
R3 A.I SET
R4 A.I CTL OUT
R5
R6
CA-A004A AUDIO
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18
TO & FROM MOTHER BOARD
AUDIO GND
+5V
LENS.GND
+8.7V
A.I SET
A.I CTL
AUDIO IN
AUDIO OUT

30-2 BOARD DIAGRAM OF AUDIO BOARD Ⓐ

- CA-A004A


UP
GK30198-D01

TOP VIEW

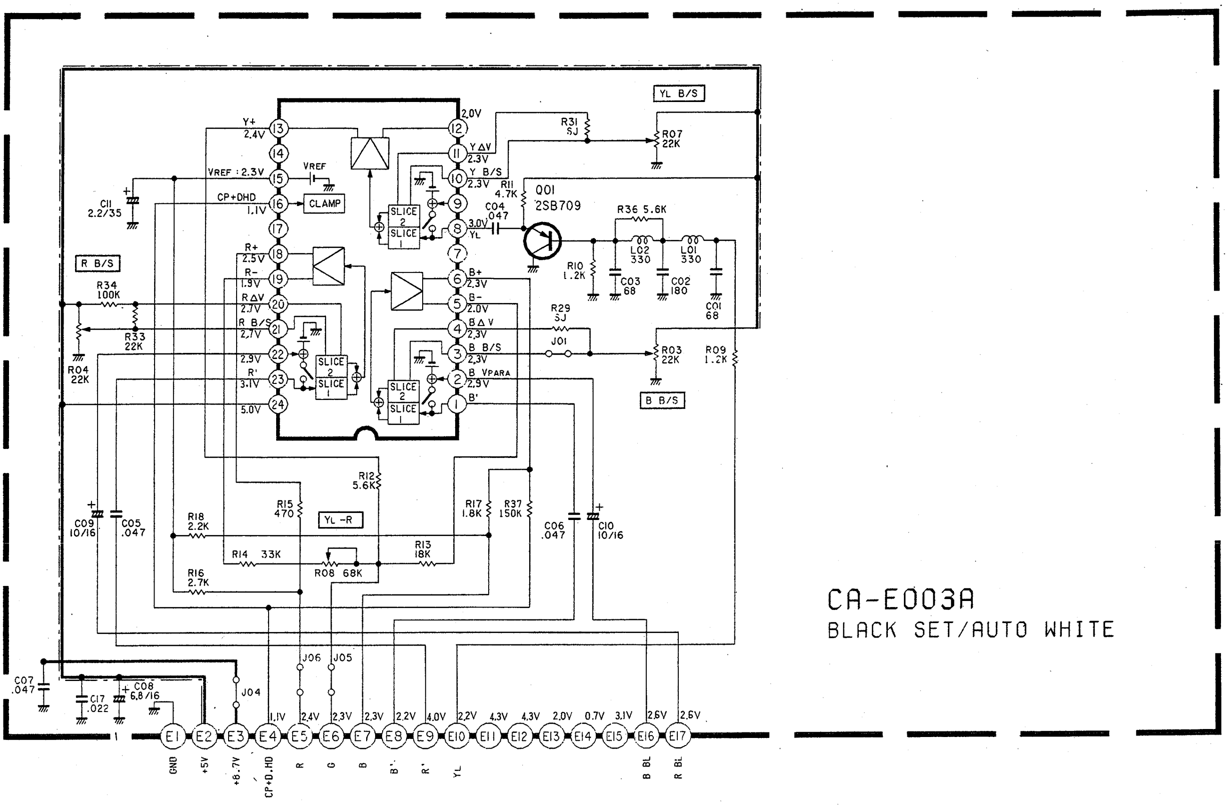

UP
C12
C02
R31
CA-A003A CA-A005A

BOTTOM VIEW

▨ Top side pattern of PC BOARD.
▨ Bottom side pattern of PC BOARD.

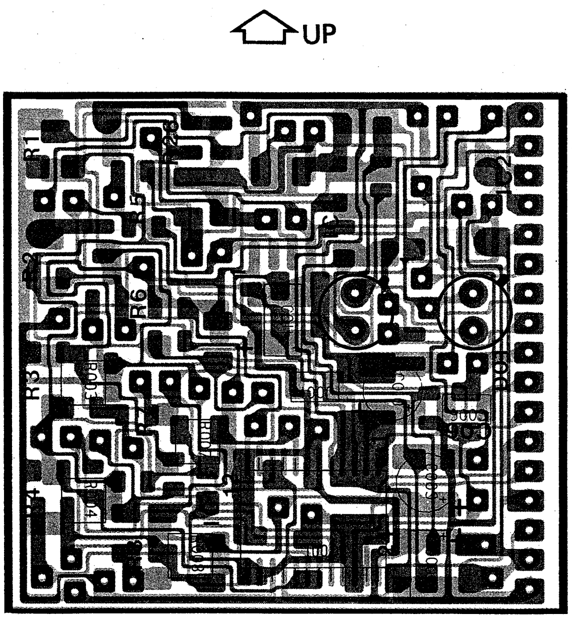
31-1 CIRCUIT DIAGRAM OF BLACK SET BOARD Ⓔ

- CA-E003A

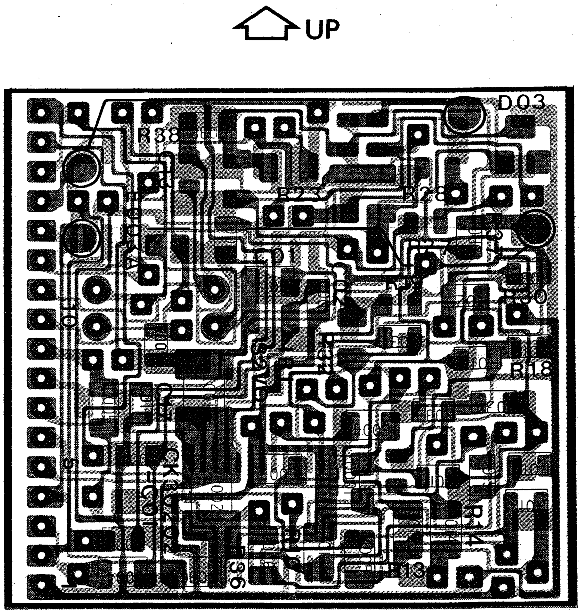

YL B/S
Y+
2.4V
VREF : 2.3V
VREF
CP+DHD
1.1V
CLAMP
C11
2.2/35
R B/S
R+
2.5V
R-
1.9V
R△V
2.7V
R B/S
2.7V
R34
100K
R33
22K
R04
22K
2.9V
R'
3.1V
5.0V
SLICE 2
SLICE 1
2.0V
Y△V
2.3V
Y B/S
2.3V
R11
4.7K
R31
5J
R07
22K
Q01
2SB709
C04
.047
3.0V
YL
R36 5.6K
L02
330
L01
330
R10
1.2K
C03
68
C02
180
C01
68
B+
2.3V
B-
2.0V
B△V
2.3V
B B/S
2.3V
B VPARA
2.5V
B'
R29
5J
J01
R03
22K
R09
1.2K
B B/S
R12
5.6K
R15
470
YL -R
R17
1.8K
R37
150K
C09
10/16
C05
.047
R18
2.2K
R14 33K
R08 68K
R13
18K
C06
.047
C10
10/16
R16
2.7K
CA-E003A
BLACK SET/AUTO WHITE
J06
J05
C07
.047
C17
.022
C08
6.8/16
J04
1.1V
2.4V
2.3V
2.3V
2.2V
4.0V
2.2V
4.3V
4.3V
2.0V
0.7V
3.1V
2.6V
2.6V
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E12
E13
E14
E15
E16
E17
GND
+5V
+8.7V
CP+D.HD
R
G
B
B'
R'
YL
B BL
R BL

31-2 BOARD DIAGRAM OF BLACK SET BOARD Ⓔ

- CA-E003A


UP
R1
R2
R3
R4
R6

TOP VIEW


UP
D03
R38
R18
R14

BOTTOM VIEW

▨ Top side pattern of PC BOARD.

■ Bottom side pattern of PC BOARD.

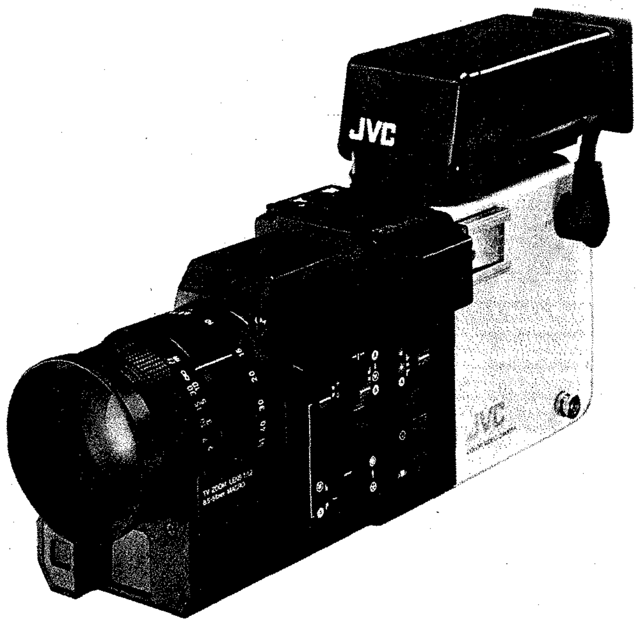
APOLOGIES AND REQUESTS

In this Service Manual, the Instruction Book for GX-N4U (or GX-N4UT) and the Lens Service Manual for GX-N7U/UT and GX-N4U/UT are not included.
We request that you conduct servicing work by following the particulars provided in this Manual.
The said Instruction Book and Lens Service Manual will be mailed to you as soon as they are completed. Upon the receipt of those three publications, please file them together with this Service Manaul.

SALES ENGINEERING DEPARTMENT
TELEVISION RECEIVER DIVISION

JVC® Instruction Book

COLOR VIDEO CAMERA
GX-N7U



For Customer Use:
Enter below the Serial No. which is located on the bottom of the camera head.
Retain this information for future reference.

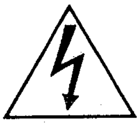
Model No. GX-N7U

Serial No.

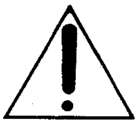
CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated ''dangerous voltage'' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:

To prevent electric shocks and fire hazards, do NOT use other than specified power source.

CAUTION

To prevent electric shock, do not disassemble the camera. No user-serviceable parts inside. Refer servicing to qualified service personnel.

VIDEO STANDARD

This camera GX-N7U is designed to produce a NTSC type video signal. Equipment using standards other than NTSC cannot be connected with this camera. Inquiries on any difficulties concerning connection and use of related VCR units should be forwarded to a JVC Authorized Service Station or JVC Service Dept.

When using the camera to record important events such as weddings, be sure to make a test recording first to check that the picture and sound are recorded normally. In this way you will not be let down by your camera, recorder or video tape when the chance to record the event will never be repeated.

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna;
Relocate this equipment with respect to the receiver;
Move this equipment away from the receiver;
Plug this equipment into a different outlet so that this equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

Thank you for purchasing this JVC Color Video Camera. To obtain the best results from your GX-N7U, read this instruction book carefully before use; after reading it, retain it for future reference.

CONTENTS

FEATURES 2
PRECAUTIONS 2
NAMES OF PARTS 3
HOW TO SET UP THE CAMERA 4
  [1] HOW TO INSTALL THE MICROPHONE 4
  [2] HOW TO INSTALL THE VIEWFINDER, ADJUST ITS POSITION AND ENLARGE THE IMAGE ON ITS SCREEN 4
  [3] HOW TO ADJUST THE GRIP BAND 5
  [4] HOW TO INSTALL THE CAMERA CABLE 5
HOW TO CONNECT TO A VCR 6
  [1] WHEN THE VCR HAS A CAMERA CONNECTION TERMINAL 6
  [2] WHEN THE VCR DOES NOT HAVE A CAMERA CONNECTION TERMINAL 6
  [3] HOW TO USE THE STEREO/MONO SWITCH 7
  [4] HOW TO USE THE POLARITY SWITCH 7
HOW TO OPERATE THE VIDEO CAMERA 8
  [1] HOW TO SUPPLY POWER 8
  [2] HOW TO USE THE IRIS CONTROL SWITCH 8
  [3] HOW TO USE THE BLC (BACKLIGHT COMPENSATION) SWITCH 9
  [4] HOW TO USE THE FOCUS SWITCH 9
  [5] HOW TO OPERATE THE WHITE BALANCE SWITCH 10
  [6] ZOOMING OPERATION 12
  [7] HOW TO RECORD WITH A VCR 12
VIEWFINDER INDICATORS 13
OTHER OPERATIONS 14
  [1] HOW TO OPERATE THE FADER BUTTON 14
  [2] HOW TO OPERATE THE MACRO FACILITY 14
  [3] USING AN EXTERNAL MICROPHONE 15
  [4] HOW TO MOUNT AND DEMOUNT LENSES 15
SPECIFICATIONS 17

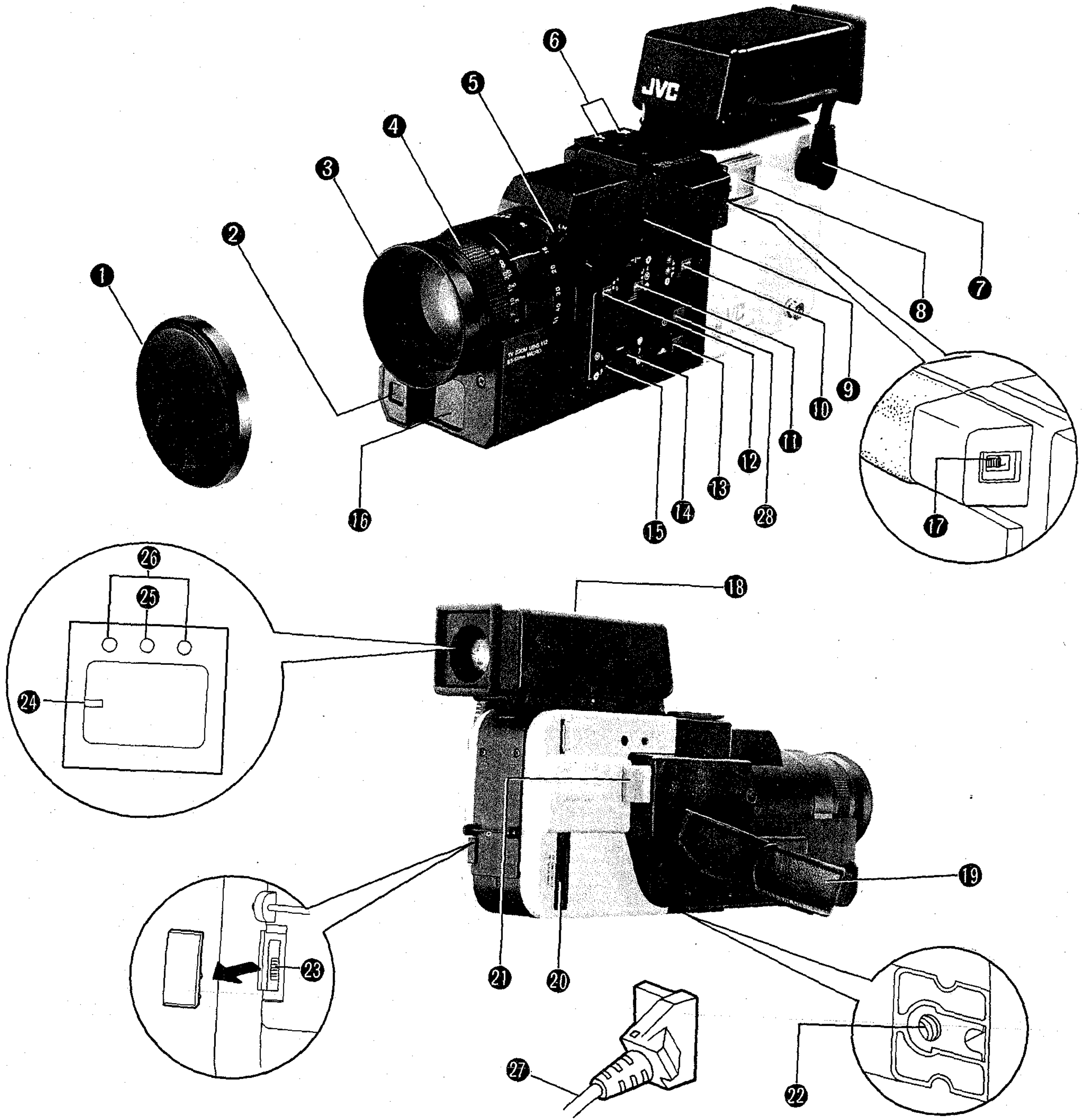
FEATURES

- Minimum illumination of 10 lux of subject being shot.
- Parallax-free semi-TTL Active Infrared Auto-Focus system.
- Auto Color Tracking (ACT) white balance adjustment.
- Auto Iris Control, 6X power zoom lens with Macro function.
- Special bayonet lens mount
  Interchangeable with lenses for SLR (single lens reflex) cameras using optional mount adaptors.

PRECAUTIONS

- Do not aim the camera lens at extremely bright objects such as the sun or other strong light sources even when not in use or switched off as well as during shooting or recording. Incorrect use could damage the pickup tube. Always be sure to keep the lens capped except during shooting.
- Do not shoot luminous bodies such as metal objects, etc. which reflect light, as this can result in not only bad pictures but damage, etc.
- Select a light which generates less heat and prevent its beam from shining directly on the camera. Otherwise heat from the light may deform the camera body or components, or cause malfunctioning.
- Apply power and operate the camera 1 or 2 hours every 6 months. The pickup tube will lose efficiency with age if the camera is not used for too long time.
- Do not disassemble any part of the camera; high voltages are developed in some parts of the camera and it is dangerous to touch them because of the possibility of electric shock.
- Do not allow inflammable objects, metal objects or water to get inside the camera, as these can cause damage or malfunctioning.
- Do not try to tighten or loosen the screws in the several servicing holes of the camera body and viewfinder. These are only for experienced service personnel.
- Avoid using the camera in places where it is excessively hot, humid or cold or where there are strong electric waves and magnetic fields which can create electrical noise, or where it is liable to catch fire. Be careful not to subject the camera to excessive shock or vibration, as these could cause distorted pictures, damage or malfunctioning.
- Do not leave the camera inside a parked car as the temperature can become extremely high when exposed directly to the sun with the doors shut. This can cause plastic parts to be deformed and result in malfunctioning.

NAMES OF PARTS



① Lens cap
② Color temperature sensor window
③ Lens hood
④ Focus ring
⑤ Zoom lever
⑥ Zoom buttons
⑦ Viewfinder connector
⑧ Accessory shoe
⑨ Microphone
⑩ WHITE BALANCE switch

⑪ Focus switch
⑫ BLC (backlight compensation) switch
⑬ FADER button
⑭ IRIS CONTROL knob
⑮ IRIS CONTROL switch
⑯ Infrared receiver
⑰ STEREO/MONO switch
⑱ Viewfinder
⑲ Grip band
⑳ Camera cable socket

㉑ VCR START/STOP button
㉒ Tripod mounting hole
㉓ VCR POLARITY switch
㉔ EXPOSURE indicator
㉕ VCR START/TAPE-END ALARM indicator (red)
㉖ WHITE BALANCE SETTING/ BATTERY warning indicators (green and yellow)
㉗ Camera cable
㉘ POWER button

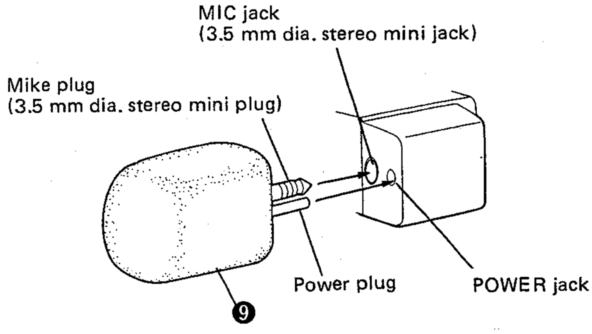
HOW TO SET UP THE CAMERA

1 HOW TO INSTALL THE MICROPHONE

Insert the mike plug of provided mike ❾ into the MIC jack, and insert the power plug into the POWER jack at the same time.

Notes:

- Confirm that provided mike ❾ is fully inserted.
- The power jack is exclusively for use with provided mike ❾; do not insert other plugs into it.

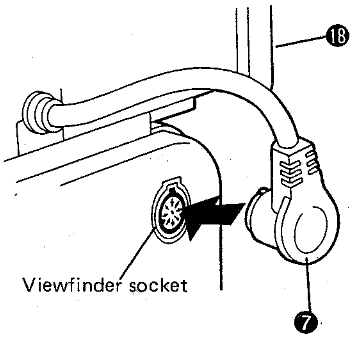

MIC jack
(3.5 mm dia. stereo mini jack)
Mike plug
(3.5 mm dia. stereo mini plug)
Power plug
POWER jack
❾

2 HOW TO INSTALL THE VIEWFINDER, ADJUST ITS POSITION AND ENLARGE THE IMAGE ON ITS SCREEN

- **How to Install Viewfinder ⓲**

First align the key (⊓) in viewfinder connector ❼ with the groove (⊔) in the viewfinder socket, and then plug connector ❼ into the socket.

Note: Confirm that viewfinder connector ❼ is fully plugged into the socket.


⓲
Viewfinder socket
❼

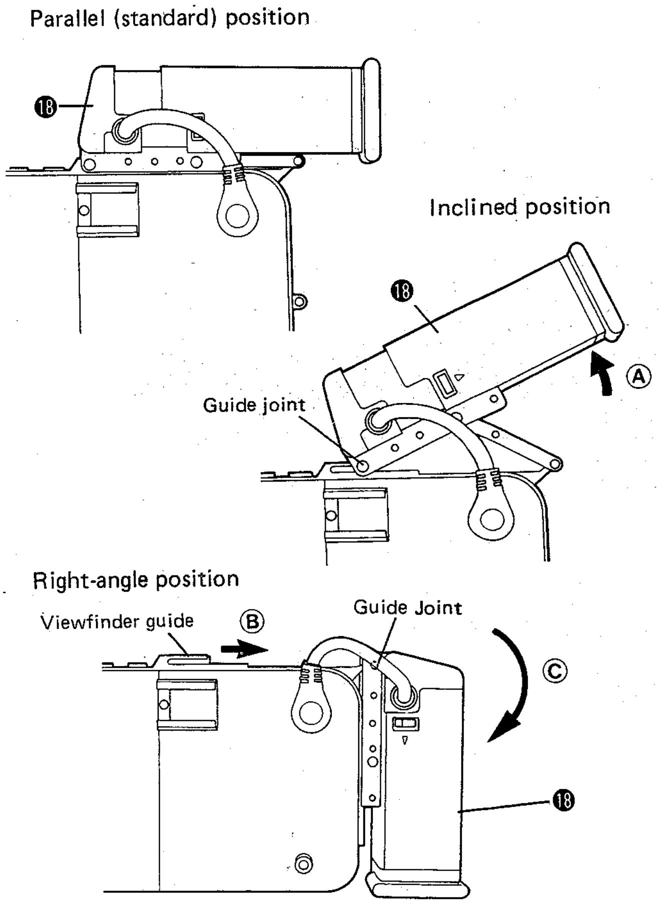
- **How to Adjust the Position of Viewfinder ⓲**

For easier and more enjoyable on-the-spot shooting, viewfinder ⓲ is designed to operate in three different positions by moving and rotating it: parallel (standard), inclined and at right-angles.

- To move viewfinder ⓲ to the inclined position from the parallel position.
  - ① Lift the viewfinder ⓲ neck in the direction of arrow Ⓐ until the viewfinder is firmly locked.

    Note: Push the screen end in the opposite direction of arrow Ⓐ to put it back to the parallel position from the inclined position.
- To move viewfinder ⓲ to the right-angle position from the inclined position.
  - ① Slide the viewfinder ⓲ guide joint in the direction of arrow Ⓑ and remove it from the viewfinder guide.
  - ② Rotate viewfinder ⓲ in the direction of arrow Ⓒ, and press it on the rear of the camera until it is firmly locked.

    Note: In order to move viewfinder ⓲ from the right-angle position to the inclined position, pull the screen end in the opposite direction of arrow Ⓒ to release the lock, and rotate the viewfinder to the top of the camera. Finally, insert the viewfinder's joint into the guide until the viewfinder is firmly locked.

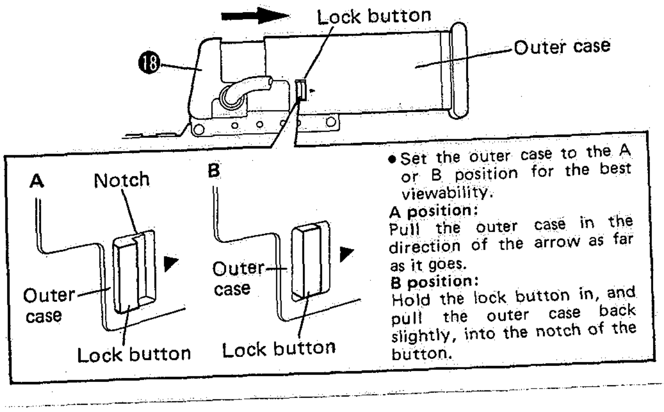

Parallel (standard) position
⓲
Inclined position
⓲
Ⓐ
Guide joint
Right-angle position
Viewfinder guide
Ⓑ
Guide Joint
Ⓒ
⓲

> Be sure to operate the camera with viewfinder ⓲ firmly locked in one of the three positions. Never leave the viewfinder between these positions.

- **HOW TO MAGNIFY THE IMAGE ON THE VIEWFINDER'S SCREEN**

Slide the viewfinder ⓲ outer case in the direction of the arrow until it clicks into its locked position to magnify the image on the viewfinder's screen.

Note: To bring the outer case back to the original position, press the lock button in and slide the case in the opposite direction of the arrow until the case is firmly locked at its original position.



- Set the outer case to the A or B position for the best viewability.

A position:
Pull the outer case in the direction of the arrow as far as it goes.

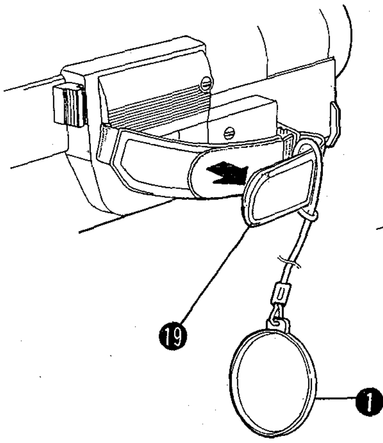
B position:
Hold the lock button in, and pull the outer case back slightly, into the notch of the button.

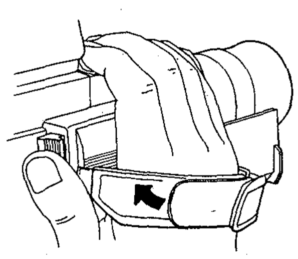
3 HOW TO ADJUST THE GRIP BAND

① Detach the end of grip band ⓳ from the end fixed to the camera, and loosen the band.

② With your right hand inside grip band ⓳, pull the end to the left to tighten it, and then press the Velcro pieces together.

Notes:
- Confirm that the Velcro pieces are together firmly.
- Looping the lens cap ❶ string around the grip band ⓳ facilitates uncapping and capping the lens.



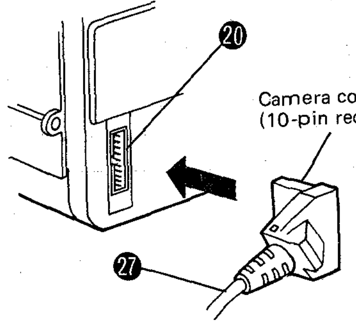


4 HOW TO INSTALL THE CAMERA CABLE

① Align the key (凸) on the camera connector of provided camera cable ㉗ with the groove (凹) in the camera cable socket ⓴ .

② Insert the connector into the socket ⓴.

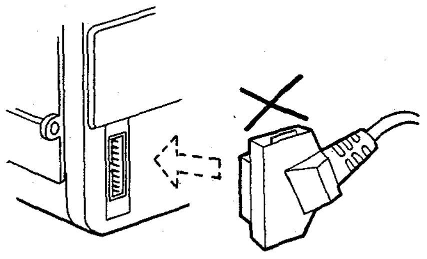
Proper connection



Note: Never attempt to force the 10-pin rectangular camera connector of provided camera cable ㉗ into the camera cable socket when the connector is positioned upside down.

- When removing the camera connector, remove by gripping the camera connector, not the cable.

Improper connection

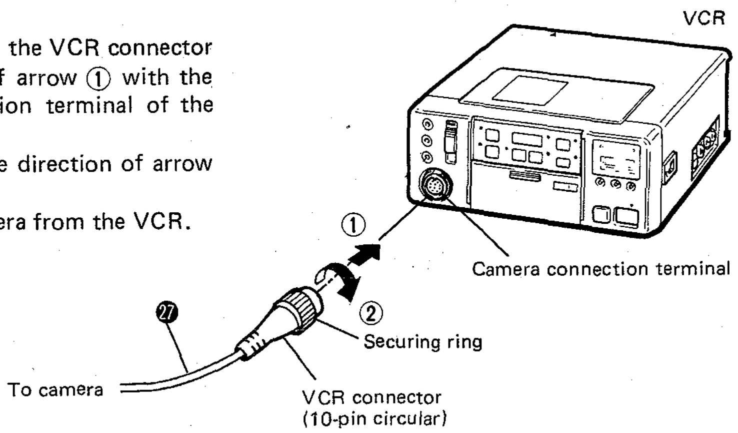


HOW TO CONNECT TO A VCR

- Do not switch the camera and VCR on before connecting to the VCR.
- Refer to the instruction manual of the VCR and other components to be connected.

1 WHEN THE VCR HAS A CAMERA CONNECTION TERMINAL

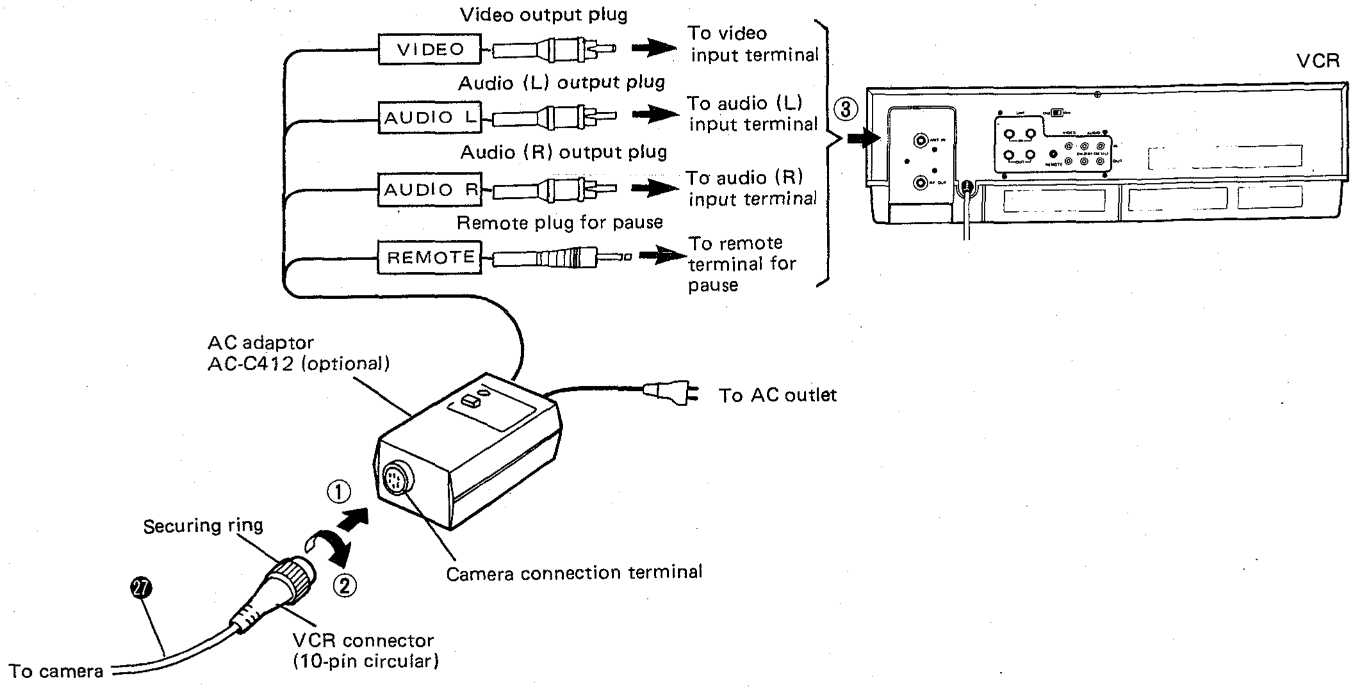
① Insert matching the groove (⊔) in the VCR connector (10-pin circular) in the direction of arrow ① with the key (⊓) in the camera connection terminal of the VCR body.
② Secure by tightening the ring in the direction of arrow ②.
Note: Power is supplied to the camera from the VCR.


VCR
①
Camera connection terminal
②
Securing ring
㉗
To camera
VCR connector
(10-pin circular)

2 WHEN THE VCR DOES NOT HAVE A CAMERA CONNECTION TERMINAL

① Insert matching the groove (⊔) in the VCR connector of provided camera cable ㉗ in the direction of arrow ① with the key (⊓) in the camera connection terminal of AC adaptor (optional, AC-C412).
② Secure by tightening the ring in the direction of arrow ②.

③ Connect the plugs of the AC adaptor to the appropriate terminals of the VCR as illustrated below.
Notes:
- Power to the camera is supplied from the AC adaptor.
- Also refer to the AC adaptor's instruction manual.


Video output plug
VIDEO
To video input terminal
Audio (L) output plug
AUDIO L
To audio (L) input terminal
Audio (R) output plug
AUDIO R
To audio (R) input terminal
Remote plug for pause
REMOTE
To remote terminal for pause
③
VCR
AC adaptor
AC-C412 (optional)
To AC outlet
①
Securing ring
②
Camera connection terminal
㉗
To camera
VCR connector
(10-pin circular)

3 HOW TO USE THE STEREO/MONO SWITCH

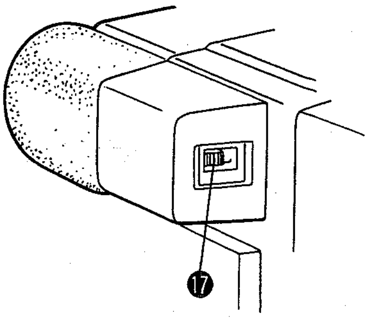
With a stereo mike, set STEREO/MONO switch ⑰ to the STEREO position when the VCR is capable of stereo recording, and set it to the MONO position when the VCR is monaural.

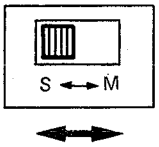
Notes:

- Provided mike ⑨ is stereo.
- With a mono mike, it is only possible to make monaural recordings.

Position S: Set switch ⑰ to this position when the VCR is capable of stereo recording. Stereo sound can be recorded by keeping the VCR in the STEREO recording mode.

Position M: When the VCR is mono, set STEREO/MONO switch ⑰ to this position.



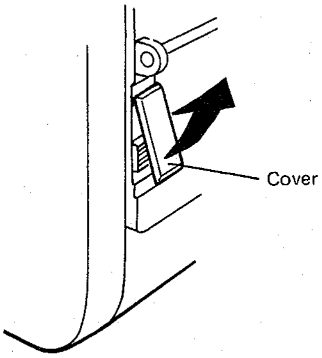


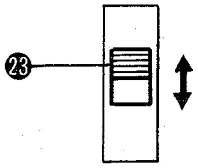
4 HOW TO USE THE POLARITY SWITCH

Set POLARITY switch ㉓ to the other position when the VCR start indicator ㉕ operates with the opposite polarity. (See page 13 for more information on the VCR start indicator ㉕).

① Remove the polarity switch cover.
② Set POLARITY. switch ㉓ to the opposite position.

Upper position : The camera is delivered with the switch in this "preset" position.
Lower position : Opposite polarity.





HOW TO OPERATE THE VIDEO CAMERA

1 HOW TO SUPPLY POWER

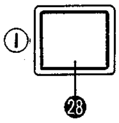
- When connected to a VCR with a camera connection terminal. (See 1 WHEN THE VCR HAS A CAMERA CONNECTION TERMINAL in "HOW TO CONNECT TO A VCR" section on page 6.)
  Power is supplied to the camera when the VCR is switched on.
- When connected to a VCR with no camera connection terminal. (See page 6.)

  Power is supplied to the camera when the AC adaptor is switched on.

Notes:

- Power supply to the camera may be different according to the type of VCR connected. Refer to the VCR's instruction manual for details.
- Be sure to remove the lens cap ❶ only after supplying power to the camera, and do not forget to switch off the power supply after replacing the cap. Do not aim the lens directly at the sun or other strong light sources. Incorrect use could damage the pickup tube.

■ **When connected to JVC compact VCR HR-C3.**
In this case, it is possible to switch the VCR on from the camera.



① Push POWER button ㉘ to switch the VCR on.
② Push it again to switch the VCR off.
Power is supplied to the camera when the VCR is switched on.

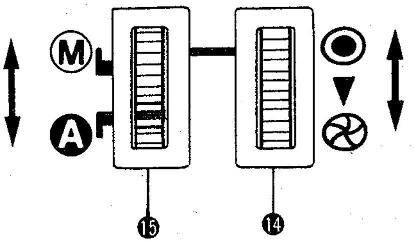
Note: Switching the VCR on from the camera is possible only when connected to JVC compact VCR HR-C3.

2 HOW TO USE THE IRIS CONTROL SWITCH

For standard shooting, set IRIS CONTROL switch ⓯ to position Ⓐ

Position Ⓐ: Set switch ⓯ to this position to select the AUTO IRIS control mode. The iris is automatically adjusted according to the brightness of the scene.

Position Ⓜ: Set IRIS CONTROL switch ⓯ to this position to select the manual IRIS CONTROL mode. Then turn IRIS CONTROL knob ⓮ in either direction (Refer to the following description of IRIS CONTROL knob ⓮) to adjust the iris manually.



Using IRIS CONTROL knob ⓮

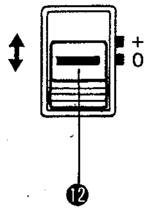
● side : Turn IRIS CONTROL knob ⓮ in direction ● to make the picture brighter (by opening the aperture).

⊗ side : Turn IRIS CONTROL knob ⓮ in direction ⊗ to make the picture darker (by closing the aperture).

Note: IRIS CONTROL knob ⓮ operates only when IRIS CONTROL switch ⓯ is set to position Ⓜ.

3 HOW TO USE THE BLC (BACKLIGHT COMPENSATION) SWITCH

For standard shooting, set BLC (backlight compensation) switch ⓬ to position "O".



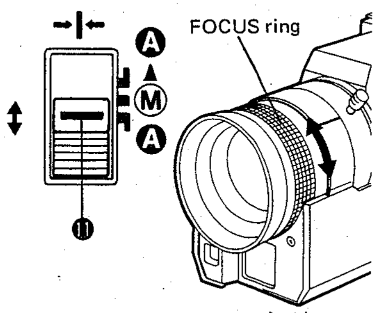
Position + : Set BLC switch ⓬ to the "+" position to allow the iris to open by approximately 1/2 an f-stop above the standard AUTO IRIS setting. Use this function when the subject is too dark and the background is too bright.

Position O : Set BLC switch ⓬ to the "O" position to release the BLC function or restore the standard AUTO IRIS CONTROL function.

Note: BLC switch ⓬ can operate, only when IRIS CONTROL switch ⓯ is set to position Ⓐ.

4 HOW TO USE THE FOCUS SWITCH

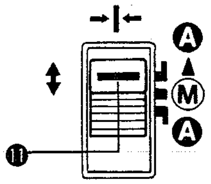
For standard shooting, set FOCUS switch ⓫ to position Ⓐ.



Lower position Ⓐ : Set FOCUS switch ⓫ to this position to focus automatically.

Manual position Ⓜ : Set FOCUS switch ⓫ to this position to focus manually, and then turn focus ring ❹ to bring the subject into focus.

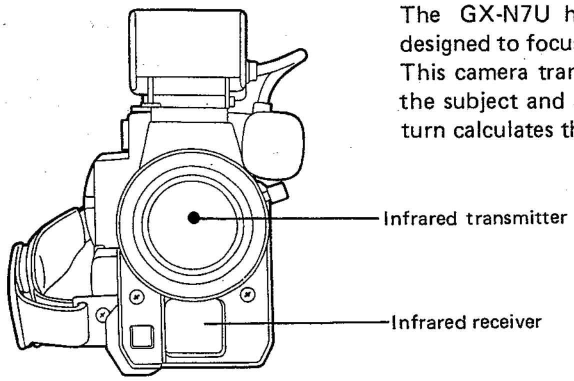
- **How to Operate POWER FOCUSING**



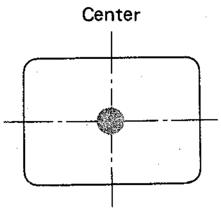
Upper position Ⓐ ▲: ① Hold FOCUS switch ⓫ pushed up in this position for POWER FOCUSING (instant auto focusing).
② Release switch ⓫ to return to MANUAL FOCUSING. After releasing switch ⓫ it will return automatically to its manual position Ⓜ.

- **How the Auto-Focus System Operates**

The GX-N7U has a semi-TTL (through-the-lens) active infrared auto focus system designed to focus on the subject automatically.
This camera transmits infrared rays from just above the center of the lens. These rays hit the subject and are reflected to the infrared receiver on the front of the camera which in turn calculates the optimum focus automatically.

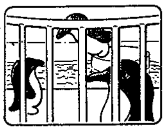
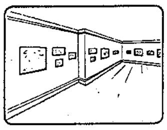
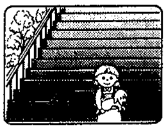
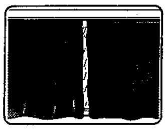
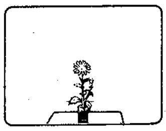
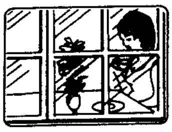


Important Points in Shooting



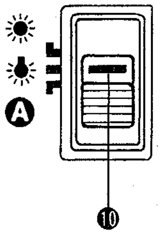
- The camera is designed to focus on the subject in the center of the field of view.
- The subject must be more than 10 centimeters (4 inches) across when 3 meters (10 feet) away from the camera for correct operation of the auto-focus system.
- The camera does not focus correctly when the MACRO function is used.
- While using AUTO FOCUS, be careful not to touch the focus ring or cover the infrared transmitter/receiver to avoid malfocusing.
- AUTO FOCUS works correctly with almost every type of subject; manual focusing is recommended, however, when optimum focus cannot be obtained by using the AUTO FOCUS. Examples of scenes with which AUTO FOCUS may not be correct are shown in ① – ⑥ below.

① When both close and distant objects are required to be in focus.
② When close and distant objects form a continuous perspective.
③ When the subject is a pattern of narrow horizontal stripes.
④ When the subject does not reflect light (i.e. a black curtain or water).
⑤ When the subject is too small.
⑥ When the subject is behind a glass window or screen.

①

②

③

④

⑤

⑥


5 HOW TO OPERATE THE WHITE BALANCE SWITCH

For standard shooting, set WHITE BALANCE switch ⑩ to position Ⓐ.



☀ position : Set WHITE BALANCE switch ⑩ to this position for outdoor shooting; At this setting, the color temperature is about 6,500 K (natural light).

💡 position : Set WHITE BALANCE switch ⑩ to this position for indoor shooting; At this setting, the color temperature is about 3,200 K (artificial light).

Ⓐ position : Set WHITE BALANCE switch ⑩ to this position for AUTO COLOR TRACKING. The AUTO COLOR TRACKING system is designed to automatically adjust the white balance by letting the built-in color temperature sensor window sense and track changes in color temperature. Color temperature compensation in this system ranges from about 2,800 K to 10,000 K.

Notes:

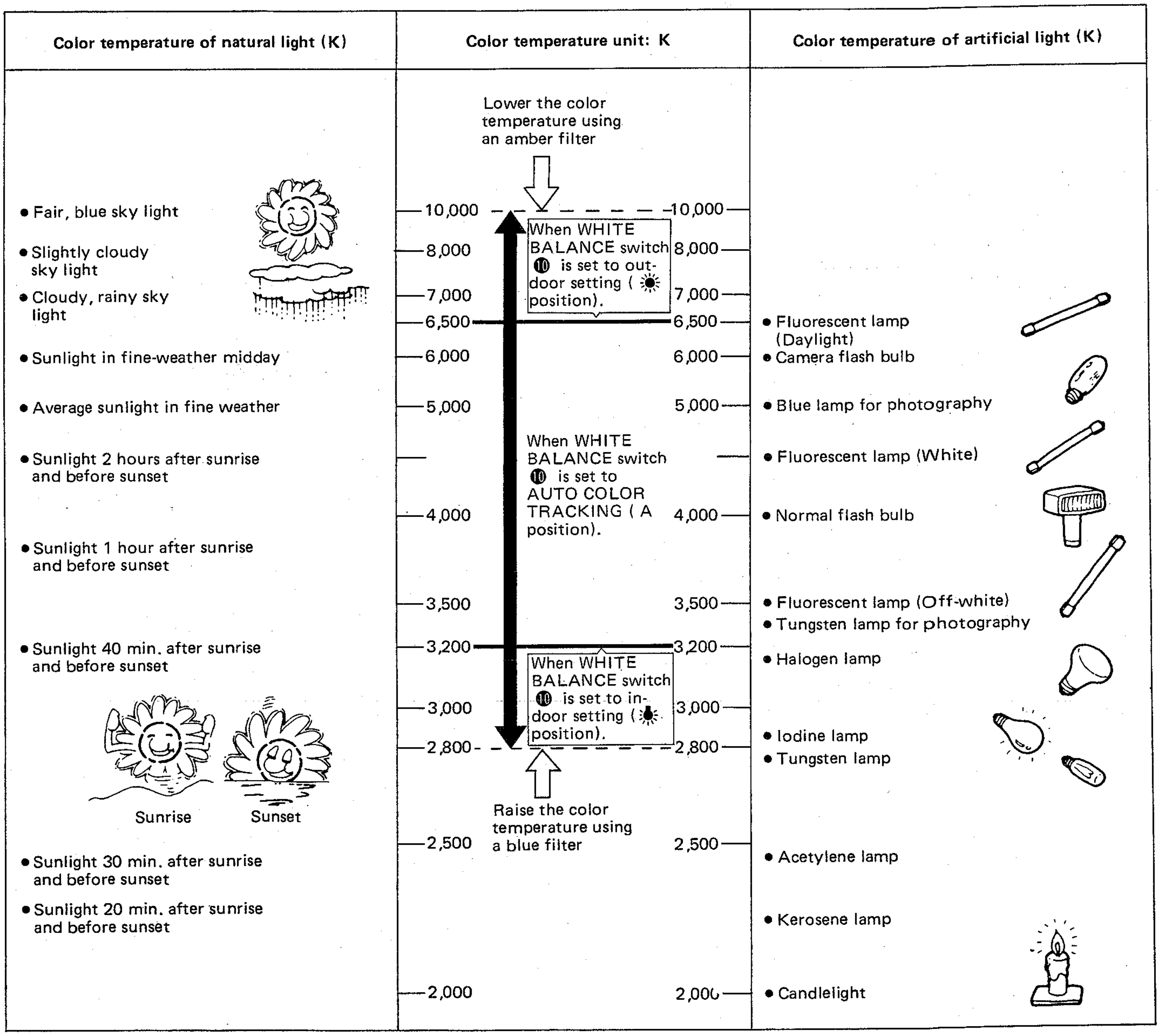
- Do not touch or cover the color temperature sensor window when the AUTO COLOR TRACKING system is operating.
- When only the subject is illuminated bright and, the background where you are situated to shoot with the camera, is dark with apparent different color temperature or under special lights such as mercury lamps, sodium lamps or stage-lighting, white balance must be adjusted. In such cases, reset the WHITE BALANCE switch to the 💡 (or ☀) position; white balance may be better than when attainable with the switch set to the Ⓐ position.

COLOR TEMPERATURE

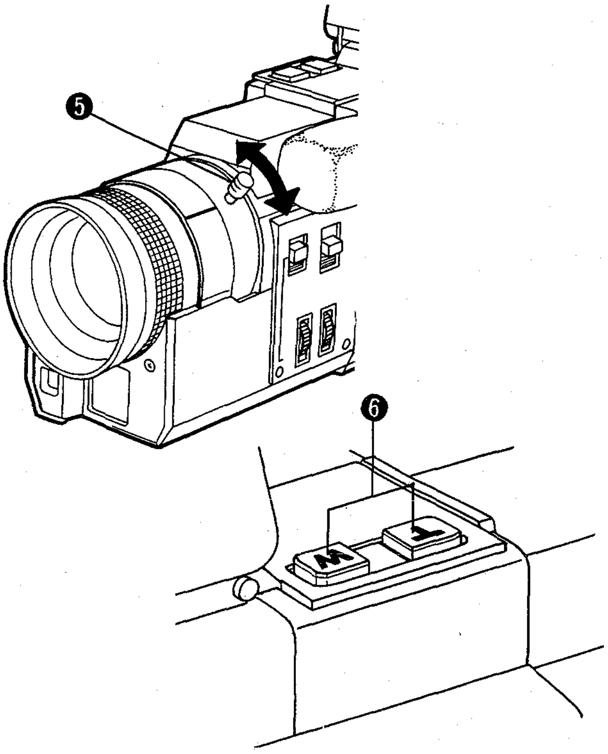
When an object emits light because its temperature rises, there is a relationship between the temperature of the object and the color of the light it is emitting. As the temperature of the object rises, the color of the light varies from red to orange, yellow, white and blue. The color of the light can be expressed as the absolute temperature of the object in degrees absolute or degrees Kelvin (abbreviated as K); this is called the "color temperature" of the light.

THE IMPORTANCE OF WHITE BALANCE ADJUSTMENT

White balance adjustment is necessary so that white objects are accurately reproduced as their original white color. If the color white is reproduced accurately, all other colors will be reproduced accurately as well. White balance adjustment should be done every time the color temperature of the light falling on the subject changes. With the human eye, this adjustment is a natural spontaneous reflex, but with a video camera, white objects are reproduced reddish or blueish if correct white balance adjustment is not performed.
With this model, this adjustment is performed automatically by setting the WHITE BALANCE switch.


Color temperature of natural light (K)
Color temperature unit: K
Color temperature of artificial light (K)
• Fair, blue sky light
• Slightly cloudy sky light
• Cloudy, rainy sky light
• Sunlight in fine-weather midday
• Average sunlight in fine weather
• Sunlight 2 hours after sunrise and before sunset
• Sunlight 1 hour after sunrise and before sunset
• Sunlight 40 min. after sunrise and before sunset
Sunrise
Sunset
• Sunlight 30 min. after sunrise and before sunset
• Sunlight 20 min. after sunrise and before sunset
Lower the color temperature using an amber filter
10,000
8,000
7,000
6,500
6,000
5,000
4,000
3,500
3,200
3,000
2,800
2,500
2,000
When WHITE BALANCE switch ⑩ is set to outdoor setting (☀ position).
When WHITE BALANCE switch ⑩ is set to AUTO COLOR TRACKING (A position).
When WHITE BALANCE switch ⑩ is set to indoor setting (💡 position).
Raise the color temperature using a blue filter
• Fluorescent lamp (Daylight)
• Camera flash bulb
• Blue lamp for photography
• Fluorescent lamp (White)
• Normal flash bulb
• Fluorescent lamp (Off-white)
• Tungsten lamp for photography
• Halogen lamp
• Iodine lamp
• Tungsten lamp
• Acetylene lamp
• Kerosene lamp
• Candlelight

6 ZOOMING OPERATION



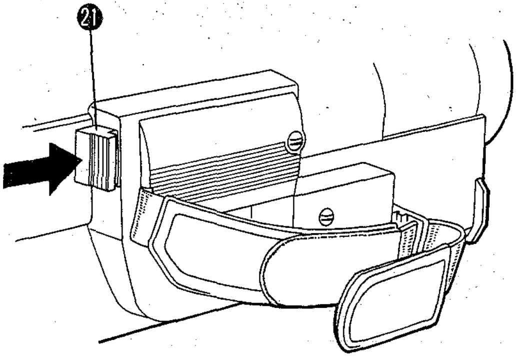
- **Manual zooming**

Turn zoom lever ❺ clockwise or counter-clockwise for manual zooming.

- **Power zooming**

Push buttons ❻ for power zooming.
Button T: to zoom to telephoto
Button W: to zoom to wide-angle

7 HOW TO RECORD WITH A VCR



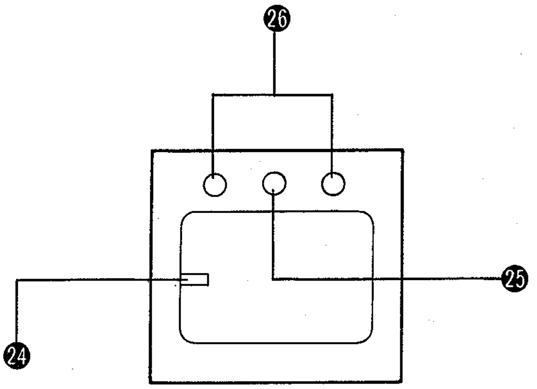
First, set the VCR to the record pause mode.
(For details refer to the VCR's instruction manual.)

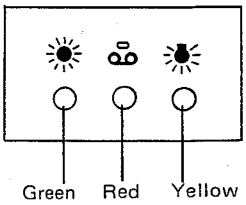
- To start recording
  Push VCR start/stop button ㉑
- To stop recording
  Press button ㉑ again to set the VCR to the record pause mode to stop recording.

Notes:

1. When shooting in quiet places, sounds originating from camera operation such as the switching of controls, auto focusing and zooming can be sometimes much louder than desirable. In such a case, replace the detachable microphone with an external one and place it as far from the camera as practical to prevent these sounds from being recorded.
2. Do not install heavy accessories (weighing more than 300 g) in the accessory shoe; this can damage the shoe.
   Be extremely carefull in handling the camera when a long, extended accessory is installed in the shoe.

VIEWFINDER INDICATORS





Exposure indicator ㉔

Exposure indicator ㉔ is displayed on the left of the screen. This indicator moves up and down according to the exposure.

When indicator ㉔. moves:

UP	means	over-exposure
MIDDLE	means	proper exposure
DOWN	means	under-exposure

VCR START/TAPE END ALARM indicator ㉕

■ **How Indicator ㉕ Shows the VCR Mode**

When the VCR is started by pressing the VCR start/stop button ㉑ , indicator (red) ㉕ flashes slowly (or lights continuously depending on the VCR).

Pressing VCR START/STOP button ㉑ again sets the VCR to the pause mode at which time, indicator ㉕ goes off.

Note: Set the polarity switch ㉓ to the opposite position when the VCR start indicator ㉕ operates with the opposite polarity (See page 7).

■ **How Indicator ㉕ Warns of the Tape Nearing Its End**

When less than one minute of tape is left, indicator (red) ㉕ flashes very quickly when the camera is operated in combination with JVC's compact VCR HR-C3.

WHITE BALANCE setting/BATTERY WARNING indicators ㉖

■ **How the Indicators ㉖ Show the White Balance Setting**

When white balance switch ⑩ is set to the indoor (artificial light) position 💡, the right lamp (yellow) of indicators ㉖ is lit.

When set to the outdoor (natural light) position ☀ , the left lamp (green) of indicators ㉖ is lit.

When set to AUTO COLOR TRACKING position Ⓐ , both lamps (green and yellow) are lit.

How Indicators ㉖ Warn of the Battery Being Exhausted

When the battery in the VCR becomes nearly exhausted, both lamps (green and yellow) of indicators ㉖ flash.

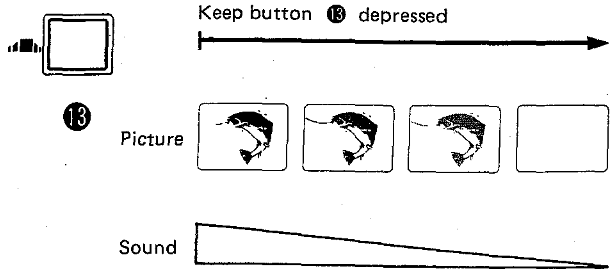
When the white balance switch is set to the indoor (artificial light) position 💡 , the right lamp (yellow) flashes. When the white balance switch is set to the outdoor (natural light) position ☀ , the left lamp (green) flashes.

When the white balance switch is set to the AUTO COLOR TRACKING position Ⓐ, both lamps (green and yellow) flash.

OTHER OPERATIONS

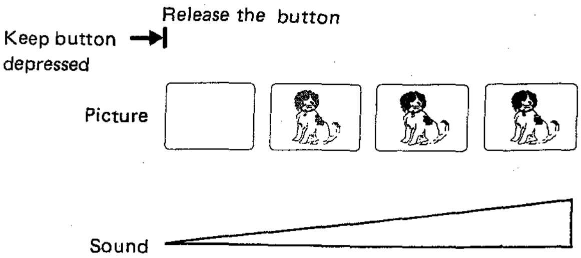
1 HOW TO OPERATE THE FADER BUTTON

① Keep FADER button ⓭ depressed; the picture will gradually disappear to white, and the sound will gradually become inaudible within approximately 5 to 6 seconds.
Note: This operation is used for fade-outs.



② Release FADER button ⓭ which has been kept depressed; the picture will gradually emerge from a white screen, and the sound will gradually increase within approximately 7 to 8 seconds.

Note: This operation is used for fade-ins.

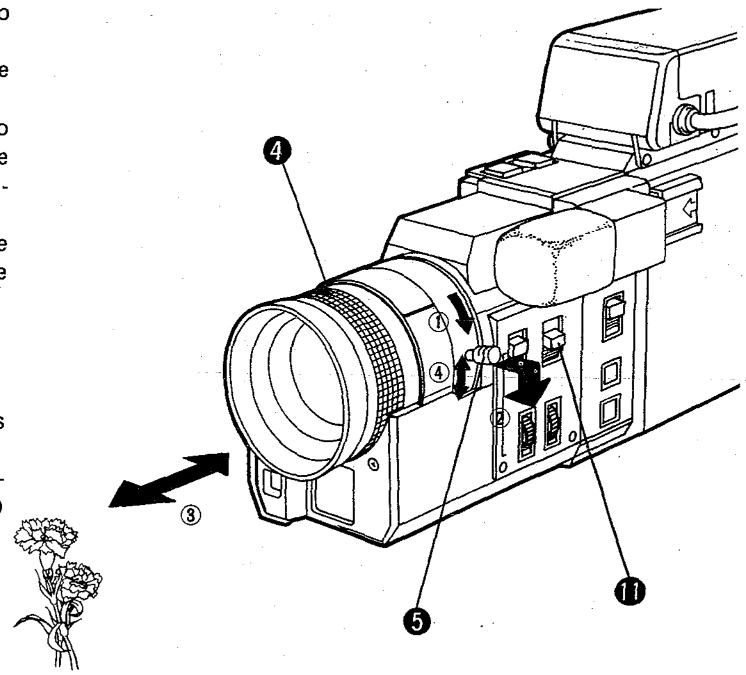


2 HOW TO OPERATE THE MACRO FACILITY

① Turn ZOOM lever ❺ in the direction of arrow ① to the maximum wide-angle position.
② Pulling ZOOM lever ❺ out, turn it further to the MACRO position (See arrow ②).
③ Adjust the distance between the camera and subject so that the image is the required size (see arrow ③). The minimum MACRO distance is approximately 1 centimeter.
④ Turn the ZOOM lever ❺ clockwise or counter-clockwise (See arrow ④) within the MACRO range so that the subject is in focus.

Notes:

- Set FOCUS switch ⓫ to the manual position Ⓜ.
- When FOCUS ring ❹ is turned, the image size varies slightly.
- When ZOOM lever ❺ is turned too far towards telephoto when focusing, a click will be heard and MACRO will be released.

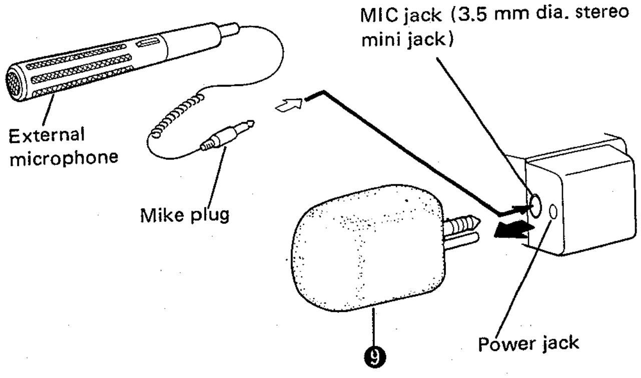


3 USING AN EXTERNAL MICROPHONE

① Pull the provided mike ❾ out of the MIC jack.
② Insert the mike plug of an external microphone into the MIC jack.

Notes:

- The MIC jack is a 3.5 mm dia. stereo-mini jack, but is compatible with a 3.5 mm dia. monaural mini plug.
- Some external microphones can be mounted in the accessory shoe.
- The POWER jack is exclusively for use with the provided mike ❾. Do not insert another microphone's plug into it.



4 HOW TO MOUNT AND DEMOUNT LENSES

With this camera, replacing the lens is possible. Use optional mount adaptors to mount interchangeable lenses for certain SLR (single lens reflex) cameras.

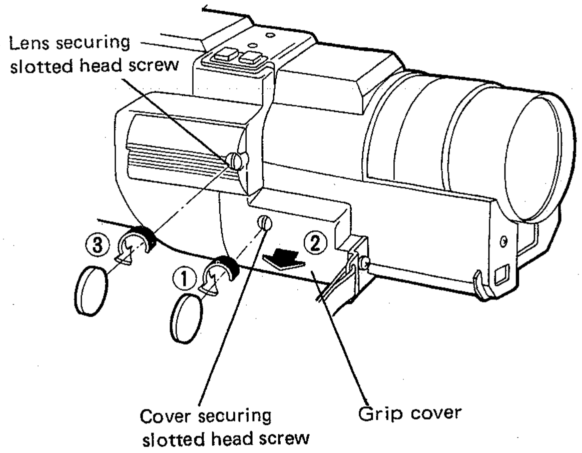
HOW TO DEMOUNT THE LENS

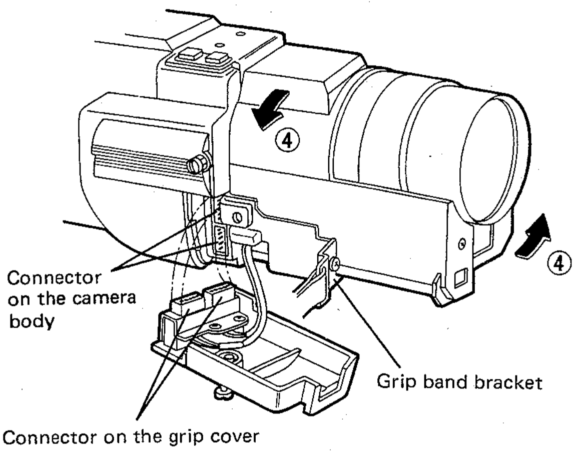
① Loosen the slotted head screw securing the grip cover to move it outward (arrow ①).
Note: The slotted head screw cannot be taken out of the grip cover.
② Remove the grip cover from the camera body (arrow ②).
Note: When removing the grip cover, be careful not to damage the connector pins. And when mounting the cover, align both connectors first, then push the cover gently to mount it on the camera body.
③ Loosen the slotted head screw securing the lens and disengage the screw (arrow ③).
Note: The slotted head screw that secures the lens cannot be taken out of the camera body.
④ Rotate the lens toward arrow ④ by 30 degrees.
⑤ Demount the lens from the camera body (arrow ⑤).

When mounting the lens, reverse steps ① through ⑤.

Notes:

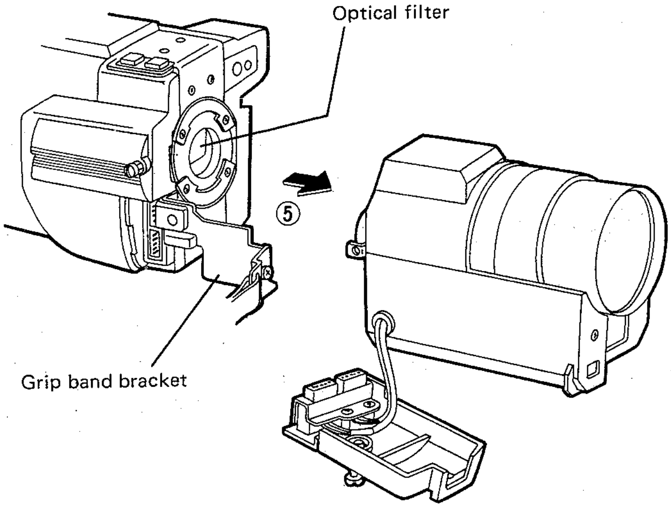
- Never touch the surfaces of the lens or optical filter.
- Be extremely careful not to allow the surfaces of the lens and optical filter to get dustry or dirty.
- Prevent strong light from shining directly on the surface of the optical filter while replacing the lens.
- For details on how to use interchangeable lenses for SLR cameras, refer to the operational manuals of the optional bayonet SLR lens mount adaptors.
- When using substitute SLR camera lenses, protect the detached lens by covering the front lens with the provided lens cap and the rear lens with the rear lens cover (provided with optional mount adaptors).
- When an interchangeable lens for an SLR camera is mounted on the camera, IRIS CONTROL should be adjusted referring to exposure indicator ㉔ in the viewfinder screen, and FOCUS must be manually adjusted with the lens. Also, the WHITE BALANCE switch ❿ can work at both position ☀ (outdoor setting) and position 💡 (indoor setting) but cannot work at position 🅐 (AUTO COLOR TRACKING setting).
Zoom buttons ❻ operate automatic zoom function only with the provided lens.
- Optional bayonent SLR Lens mount adaptors are available from JVC for use with Canon (LA-C7C(U)), Pentax (LA-C7P(U)), Olympus (LA-C7L(U)), Nikon (LA-C7N(U)) and Minolta (LA-C7M(U)) lenses. Use the mount adaptor designed for the chosen lens.


Lens securing slotted head screw
③
①
②
Cover securing slotted head screw
Grip cover


④
④
Connector on the camera body
Grip band bracket
Connector on the grip cover

Notes:

1. An interchangeable lens, having more than a 63 mm diameter from within 25 mm of the surface of the mount, will not fit on the camera because of the grip band bracket.
2. Many kinds of interchangeable lenses of various specifications are available from camera shops. Choose a proper lens after having carefully determined the application and performance you desire.
3. The warranty does not cover the performance and quality of the camera when using it with an interchangeable lens mounted (one purchased at a camera shop).

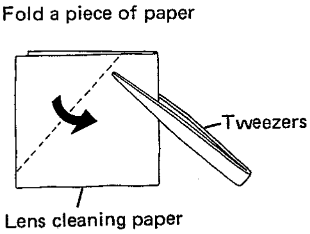

Optical filter
⑤
Grip band bracket

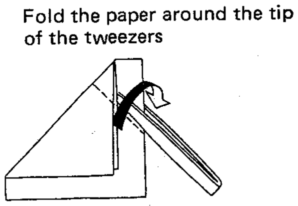
HOW TO CLEAN LENSES

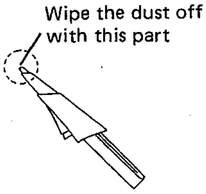
When the surfaces of the lens and optical filter become dusty, blow it off with a blower or sweep it off with a soft, clean brush.

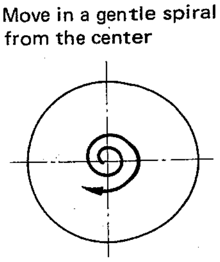
For cleaning the lens, fold a piece of lens cleaning paper (available in camera shops) around the tip of some tweezers, moisten the paper with a lens cleaning solution (available in camera shops), then wipe the dust off the surfaces of the lens and optical filter, moving in a gentle spiral from the center of the lens.

Notes:
- Use alcohol-based lens cleaning solution.
- Do not wipe the lens violently.


Fold a piece of paper
Tweezers
Lens cleaning paper


Fold the paper around the tip of the tweezers


Wipe the dust off with this part


Move in a gentle spiral from the center

SPECIFICATIONS

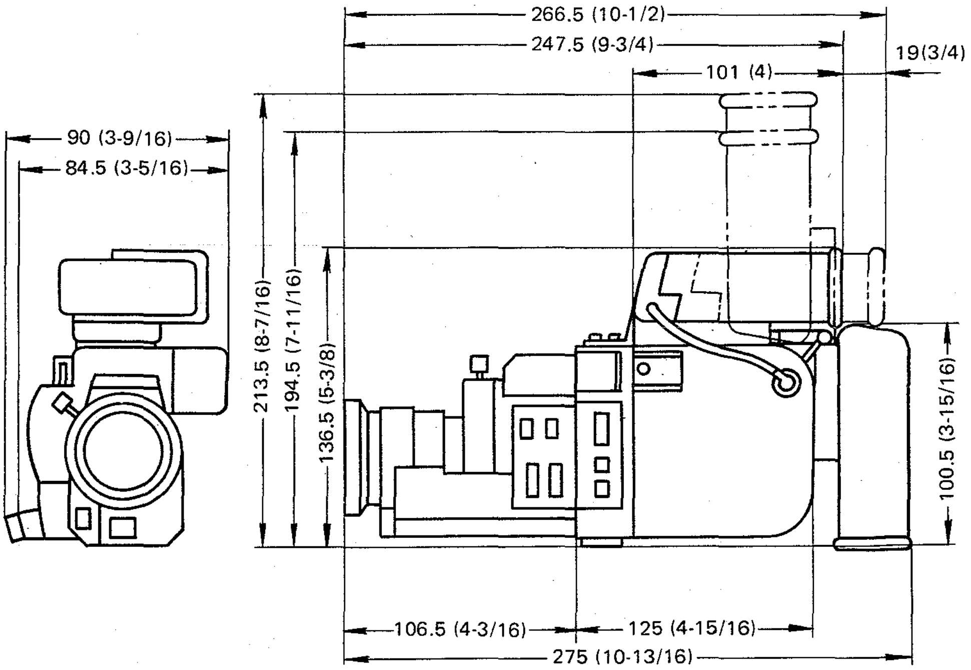
Type	: Color Video Camera
System	: Step-energy decoding system (single tube)
Signal system	: Based on NTSC standard
Pickup tube	: 1/2" Newvicon
Scanning	: 525 lines, 2: 1 interlaced
Resolution	: 270 lines or more (horizontal) 300 lines or more (vertical)
Synchronizing system	: Internal sync
Video output	: 1 Vp-p, 75 Ω unbalanced (sync negative)
Video S/N ratio	: 45 dB or more
Audio output	: 77.5 m Vrms (-20 dBs), low impedance, 2 channels
Minimum illumination	: 10 lux (in auto iris mode excluding telephoto setting)
Illumination range	: 10 – 100,000 lux (in auto iris mode)
Minimum optimum illumination of subject being shot	: 500 lux
Color temperature setting	: ① Outdoor (natural light) setting (☀ : About 6,500 K) ② Indoor (artificial light) setting (☀ : About 3,200 K) ③ AUTO COLOR TRACKING setting (Ⓐ : About 2,800 K – 10,000 K)
Provided microphone	: Stereo microphone

Microphone jack	: 0.28 m Vrms (-68.79 dBs), high impedance, 2 channels (3.5 mm dia. stereo mini jack)
Viewfinder	: Electronic viewfinder (CRT, 1/2" black-and-white)
Lens	: F1.2, f = 8.5 – 51 mm, 6X Power zoom, Filter mounting screw dia. 46 mm, Auto iris control, Macro mechanism, Auto-focus
ZOOM min. distance	: Approx. 1 meter
MACRO min. distance	: Approx. 1 centimeter
Lens mount	: Special bayonet mount
Power source	: DC 12 V
Power consumption	: 6.0 W
Operating temperature range	: 0°C – 40°C
Weight	: 1.1 kg (2.5 lbs) (excluding camera cable and lens cap)
Accessories (included with camera)	: Stereo microphone Camera cable Lens cap Lens food EVF Rubber Eye cup

* Design and specifications subject to change without notice.

*This color video camera is designed to output video signals conforming with the NTSC (USA) standard. Thus, this camera is not usable for VCRs or color television units which use color signal systems other than the NTSC (USA) standard.

DIMENSIONS Unit: mm (inches)



GX-N7U/UT
GX-N4U/UT
INTRODUCTION AND REPAIR SERVICE

For details on lens repair (parts, repairing classification, adjustment, etc.), refer to CLC02206-A-BFZ LENS SERVICE MANUAL No. 5506L.

CONTENTS

CAMERA CABLES 2

SPECIFIC SERVICE AND PRECAUTIONS 3

REMOVING THE OUTSIDE COMPONENTS 7

- REMOVING THE DETACHABLE MICROPHONE 7
- REMOVING THE ELECTRONIC VIEWFINDER (EVF) 7
- REMOVING THE LENS 8
- REMOVING THE CAMERA BODY COVER 9
- REMOVING THE SWITCHING REGULATOR 11
- REMOVING THE MOTHER BOARD 11
- REMOVING THE PREAMPLIFIER BOARD 11
- REPLACING THE PICKUP TUBE 12
- DISASSEMBLY & REPLACEMENT OF BIAS LIGHT & OPTICAL LOW-PASS FILTER 13
- REMOVING THE GRIP BELT 13
- REMOVING THE VTR SWITCH 14
- DISASSEMBLING THE ELECTRONIC VIEWFINDER (EVF) 14
- REMOVING THE EVF BOARD AND CRT 16

No. 5506/No. 5519
Apr. 1984

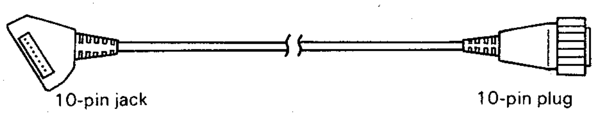
CAMERA CABLES

The standard camera cable provided (**VC-444-2E**) can be used with VTR's (VCR's) that have camera connecting terminals. For other types of VTR's (VCR's), use an optional camera cable (**VC-408-3** or **VC-408-3ST**) together with the **VC-444-2E**. An extension cable for the GX series is also available. Briefly, the camera cables are subdivided into the following types:

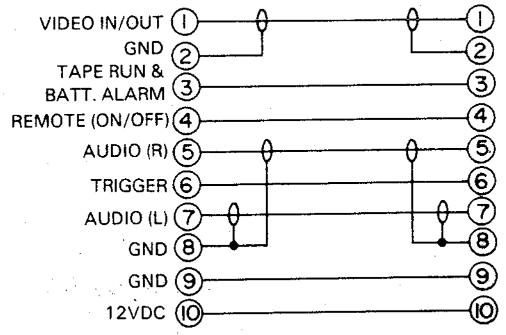
(1) 10-pin jack/10-pin plug camera cable

VC-444-2E .... 2m (provided)

Camera cable


10-pin jack
10-pin plug

Connection

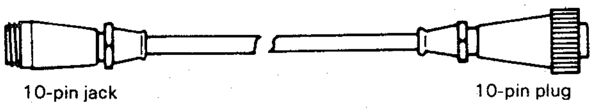

VIDEO IN/OUT ①
GND ②
TAPE RUN & BATT. ALARM ③
REMOTE (ON/OFF) ④
AUDIO (R) ⑤
TRIGGER ⑥
AUDIO (L) ⑦
GND ⑧
GND ⑨
12VDC ⑩
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩

(2) 10-pin jack/10-pin plug extension cable

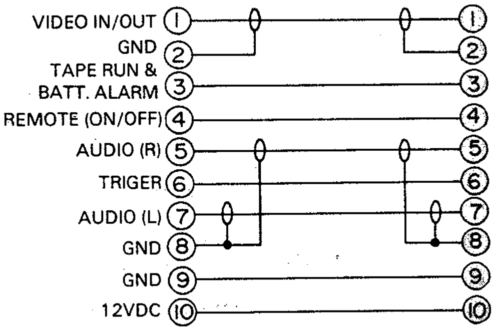
VC-235-10(U). . . . . 10 m (option)

* Do not use more than one extension cable.

Camera cable


10-pin jack
10-pin plug

Connection

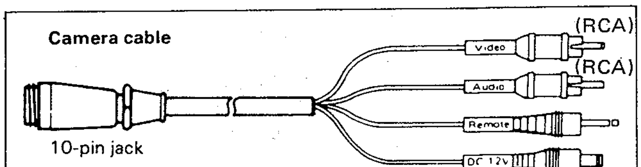

VIDEO IN/OUT ①
GND ②
TAPE RUN & BATT. ALARM ③
REMOTE (ON/OFF) ④
AUDIO (R) ⑤
TRIGER ⑥
AUDIO (L) ⑦
GND ⑧
GND ⑨
12VDC ⑩
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩

(3) 10-pin jack/multiplug camera cable

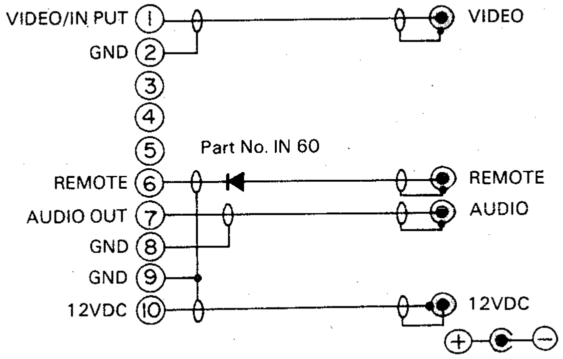
VC-408-3 . . . . 3 m (option)

* It comes with the conversion plug shown below. Select the conversion plug according to the type of the VTR (VCR) used.

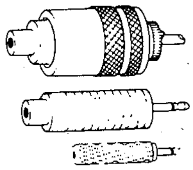
Camera cable


(RCA)
(RCA)
Video
Audio
Remote
DC 12V
10-pin jack

Connection


VIDEO/IN PUT ①
GND ②
③
④
⑤
Part No. IN 60
REMOTE ⑥
AUDIO OUT ⑦
GND ⑧
GND ⑨
12VDC ⑩
VIDEO
REMOTE
AUDIO
12VDC
⊕-●-⊖

Conversion plug



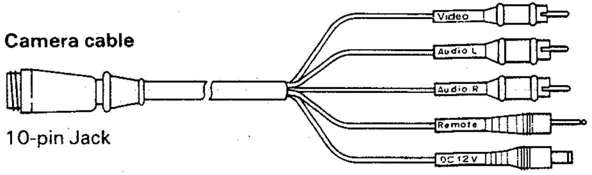
- A75826 Conversion Plug
  (RCA M-type jack for video)
- A75806 Conversion Plug
  (RCA Mini-type jack for audio)
- A75807 Conversion Plug
  (3.5-2.5, 1 = 11 mm, for remote control)

(4) 10-pin jack/multiplug camera cable (STEREO)

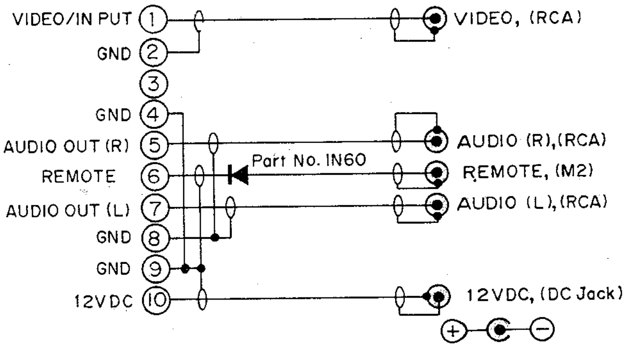
VC-408-3ST. . . . . 3 m (option)

*For stereo recording with a stereo VTR, use this cable with **VC-444-2E**.

Camera cable

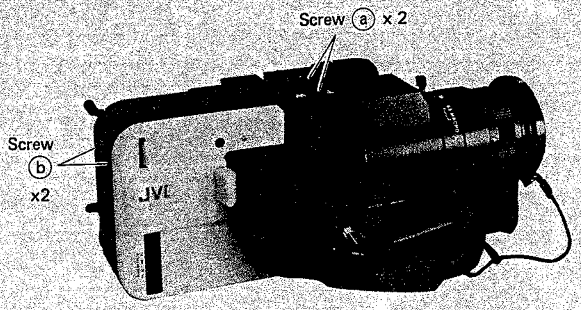
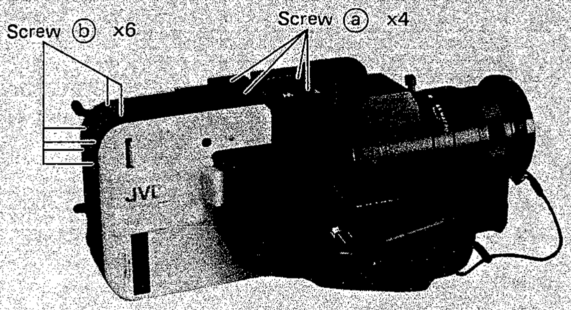

Video
Audio L
Audio R
Remote
DC 12V
10-pin Jack

Connection


VIDEO/IN PUT ①
GND ②
③
GND ④
AUDIO OUT (R) ⑤
REMOTE ⑥
AUDIO OUT (L) ⑦
GND ⑧
GND ⑨
12VDC ⑩
Part No. IN60
VIDEO, (RCA)
AUDIO (R),(RCA)
REMOTE, (M2)
AUDIO (L),(RCA)
12VDC, (DC Jack)
⊕-●-⊖

Correction of Printing Errors

- **Make corrections on printing errors and omissions in this INTRODUCTION as per the following listings.**

PAGE	MISPRINT	CORRECT PRINTING
9	 Fig. 4-1 Removing the camera body cover (1)	 Fig. 4-1 Removing the camera body cover (1)
9	1. Remove the two ⓐ screws and the two ⓑ screws as shown in Fig. 4-1.	1. Remove the four ⓐ screws and the six ⓑ screws as shown in Fig. 4-1.
10	**NOTE:** The tapped knob and slide knob are removed together with the cover. Be careful that they are not lost.	**NOTE:** 1. The tapped knob and slide knob are removed together with the cover. Be careful that they are not lost. 2. By removing the cover, the plate nut becomes disengaged, creating the hazard of causing it to contact the board. Be sure to turn the power supply OFF prior to removing the cover.
10	**NOTE:** The lens should be removed before disassembling the body cover. The lens should be replaced after the bottom cover has been disassembled.	**NOTE:** 1. The lens should be removed before disassembling the body cover. The lens should be replaced after the bottom cover has been disassembled. 2. When supplying power with the R and S connectors removed, exercise care not to cause the board connector pins to contact the chassis.

SPECIFIC SERVICE AND PRECAUTIONS

1. Volume adjustment

This camera permits direct adjustment of the following volumes without removing the camera body cover:

①	R305	FOCUS	
②	R06 and R08	CARRIER BALANCE	
③	R834	BRIGHTNESS	(EVF section)
④	R842	FOCUS	
⑤	R837	V. HEIGHT	
⑥	R841	H. HOLD	

If any adjustments must be made, carefully follow the procedures below. Do not change these volumes unless absolutely necessary.

(1) Adjusting the CARRIER BALANCE and FOCUS

① As shown in **Fig. 1-2**, the **CARRIER BALANCE VR** can be adjusted from the bottom of the camera.

② As shown in **Fig. 1-3**, the **FOCUS VR** can be adjusted from the side of the camera.

(2) Adjusting the BRIGHTNESS, FOCUS, V. HEIGHT and H. HOLD in the Electronic Viewfinder (EVF) section.

① Remove the EVF food.

② As shown in **Fig. 1-4**, the **BRIGHTNESS, FOCUS, V. HIGHT** and **H. HOLD** can be adjusted at the bottom of the EVF section.

2. Camera settings made at the factory

This camera's switches are preset at the factory as follows:

① **Iris compensation switch** → "0"
② **White balance button** → "💡" (IN DOOR)
③ **Focus switch** → "AUTO" } (Only GX-N7U)
④ **Iris switch** → "Ⓐ" } (Only GX-N7U)

*For the positions of other switches, refer to the related instruction manuals.

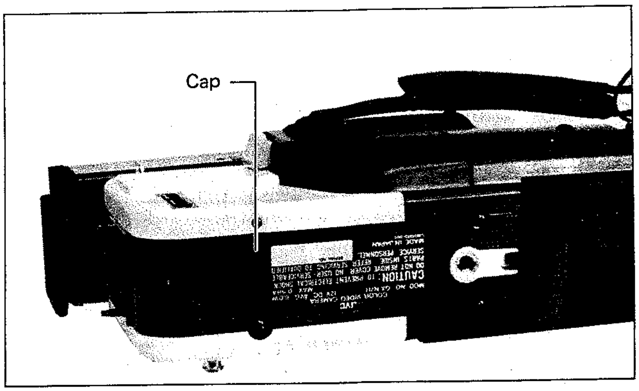


Fig. 1-1 Adjusting the **CARRIER BALANCE (1)**

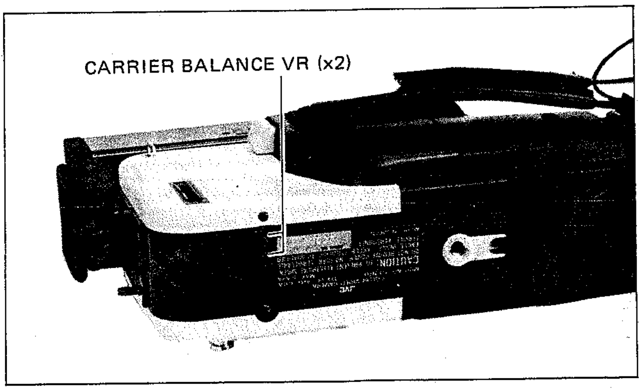


Fig. 1-2 Adjusting the **CARRIER BALANCE (2)**

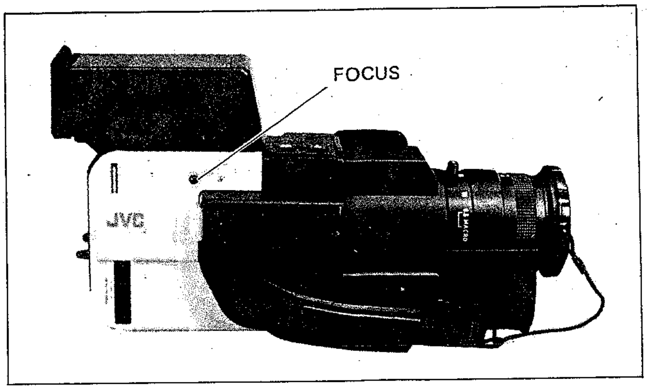


Fig. 1-3 Adjusting the **FOCUS**

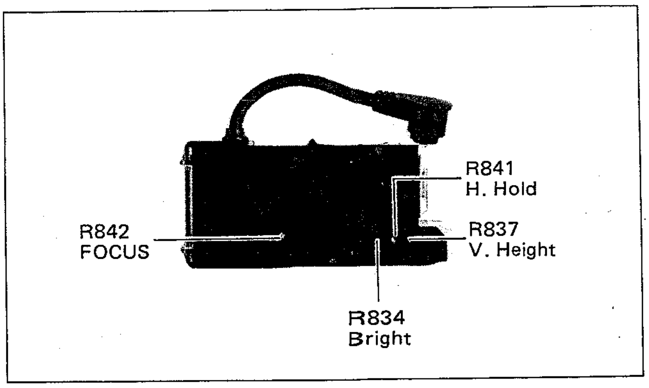


Fig. 1-4 Adjusting the **FOCUS, BRIGHTNESS, V. HEIGHT** and **H. HOLD**

3. STEREO/MONO Switch (Only GX-N7U)

This camera can be used in combination with a stereo VCR(VTR) to record in stereo.
When using it with a MONO VCR(VTR), be sure to set the STEREO/MONO switch to the MONO position. If not, sound will only be recorded in the left channel, resulting in incomplete soundtrack.

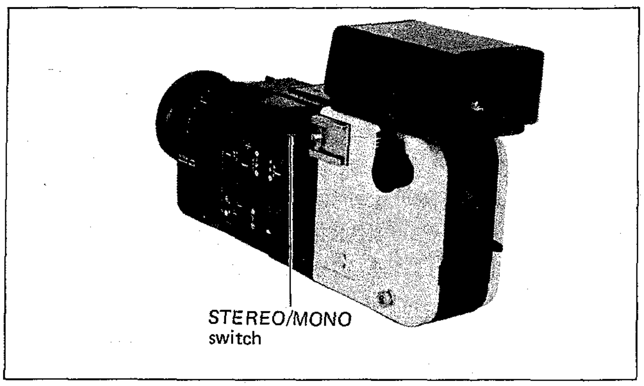

STEREO/MONO
switch

Fig. 3-1 Setting the STEREO/MONO Switch

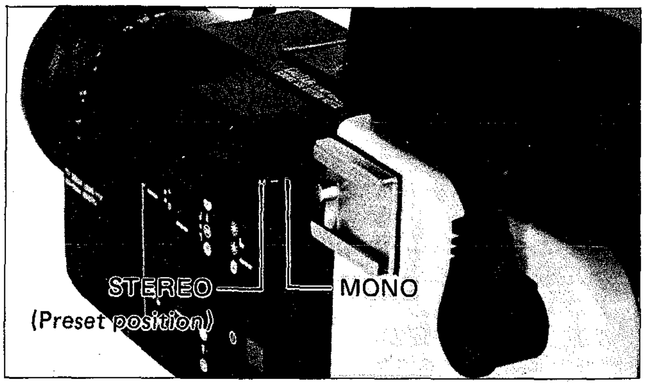

STEREO
(Preset position)
MONO

Fig. 3-2 Setting the STEREO/MONO Switch

4 VCR(VTR) compatibility switch

Even when the camera is connected to a VHS-type VCR (VTR), the VCR(VTR) itself may have reversed stop and start functions that require the camera's preset compatilitlity switch to be reset.
This problem is indicated by incoherent images in the camera viewfinder.
If switch adjustment is necessary, please observe the following procedures.

① Remove cover shown in **Fig. 4-1** with a screwdriver.
② Set switch shown in **Fig. 4-2** for the type of VCR (VTR) to be used.

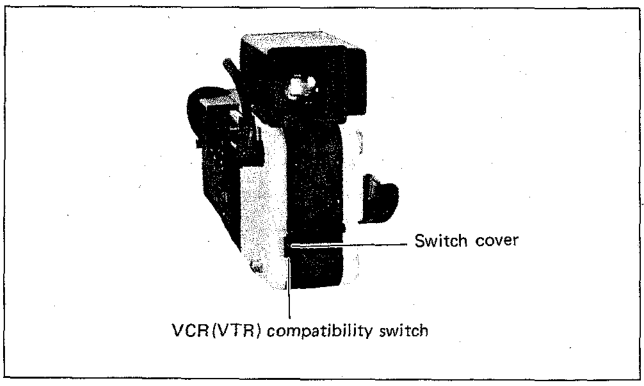

Switch cover
VCR(VTR) compatibility switch

Fig. 4-1 Setting the VCR(VTR) compatibility switch (1)

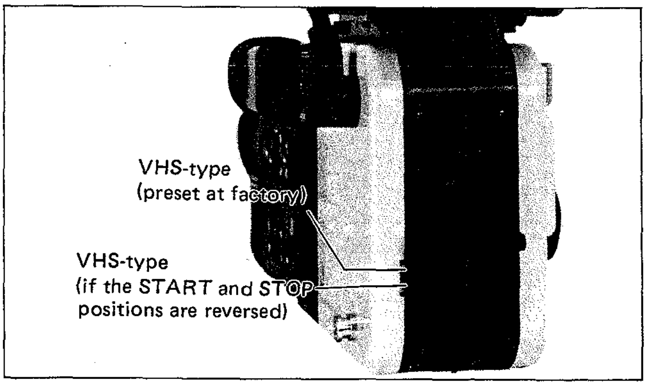

VHS-type
(preset at factory)
VHS-type
(if the START and STOP positions are reversed)

Fig. 4-2 Setting the VCR(VTR) compatibility switch (2)

5. **Two-side through-hole PCB**
   A two-side through-hole PCB is used on this camera. Patterns and wires are designed extra slim to attain high-density component mounting. Rough handling may damage the patterns/wires or other components. When disassembling, repairing, or adjusting the PC boards, exercise care **to avoid damage.**

6. When repairing the circuit board modules, please note that the camera's various circuits are all contained on separate independent circuit boards. Each circuit board can be removed and repaired separately.
   (1) **Removing circuit board module**
   Use a solder sucker and completely remove solder before pulling out circuit board. As shown in **Fig. 6** use a soldering iron with a thin channeled tip, melt the solder and quickly pull out the circuit board.

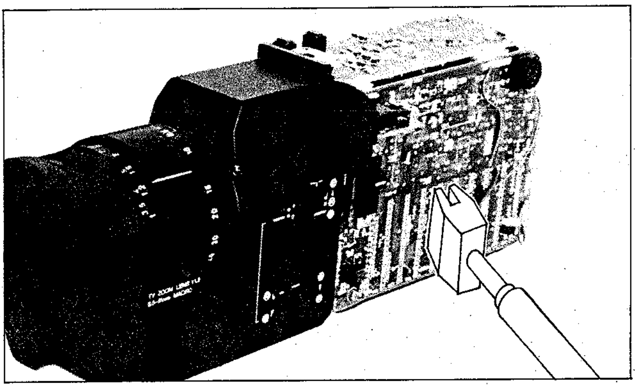


Fig. 6 Removing circuit board module

NOTE:
- Take care not to damage or remove solder from other parts.
- If more than two circuit boards are removed, make sure that they are replaced in the proper positions.

7. **Replacing chip components**
   Use a soldering iron (temperature 260 ~ 300°C, about 17W) with a slim tip and high insulating ability. Those with a solder sucker (about 55W) are usually easier to use.

NOTE: This video camera uses many mini-flat ICs. To remove these, melt the solder or cut off the IC pins. Take care not to scratch or peel off the BOARD foil pattern.

8. **Chip components display**
   Besides the resistors, short jumpers, FET's, ceramic capacitors, transistors, and other chip components, the chip tantalum capacitors and chip volume are used on the camera. None of these chip components are reusable again once they are used.

NOTE: 1. Avoid rough handling of the VR.
2. Use a thin-tip insulated-type screwdriver to adjust the CH VR.

■ **How to read printings**

On certain chip components, printing is applied as follows:

① **Chip metal glaze resistor (CH MG R)**
The diagram shown in **Fig. 8-1** Ⓐ is applied to some of these resistors.
Reading method (Example)
1 2 3 = 12×10^3 Unit: [Ω]

② **Short jumper (0 [Ω] of CH MG R)**
No diagram is applied to short jumpers. A "0" display is applied to Type Ⓐ shown in **Fig. 8-1.**

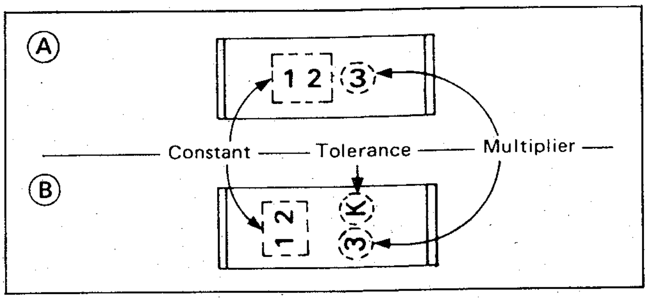


Fig. 8-1 Example of CH MG R/CH C Cap. codes

③ **Chip ceramic capacitor (CH C Cap.)**
- The diagram shown in **Fig. 8-1** Ⓑ is applied to some of the CH C Caps. On some others, there is no diagram that is of any use to users.
  Reading method (Example)
  1 2 3 K = 12×10^3 Unit: [PF], Tolerance: K (± 10%)

- As shown in **Fig. 8-2** some chip ceramic capacitors are represented by two digits. **Table 8-1** shows how those figures should be read.

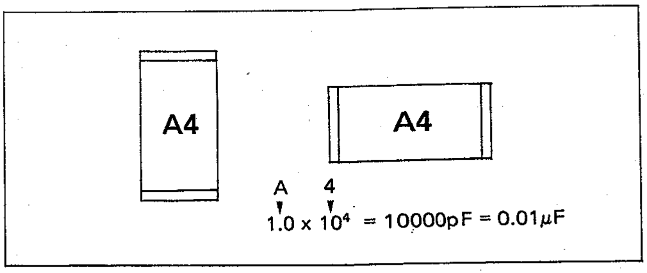


Fig. 8-2 Example of CH C Cap.

Alphabet	A	B	C	D	E	F	G	H	J	K
Constant	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4
Alphabet	L	M	N	P	Q	R	S	T	U	V
Constant	2.7	3.0	3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2
Alphabet	W	X	Y	Z		a	b	d	e	f
Constant	6.8	7.5	8.2	9.1		2.5	3.5	4.0	4.5	5.0
Alphabet	m	n	t	y						
Constant	6.0	7.0	8.0	9.0						
Numeral	0	1	2	3	4	5	6	7	8	9
Multiplier	10^0	10^1	10^2	10^3	10^4	10^5			10^{-2}	10^{-1}

Table 8-1 CH C Cap. capacity value

④ **Chip Variable Resistor (CH VR)**

A two-digit code is printed on some CH VRs. They indicate a reading method, as shown in **Table 8-2.**

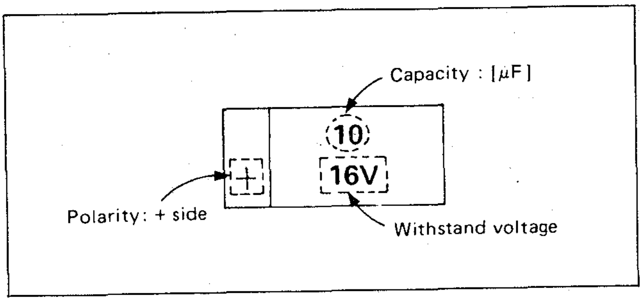
Three-digit codes are also used. These codes are read in the same way as those for CH MG R.

⑤ **Chip Tantalum Capacitor (CH Tan. Cap.)**

The diagram shown in **Fig. 8-3** is applied to some of the CH Tan. Caps.

Reading method (Example)

The type shown in **Fig. 8-3** is 10 μF, 16 WV chip tantalum capacitor.



Fit. 8-3 Example of CH Tan. C Cap. codes

⑥ **Chip Transistor**

The labels shown in **Table 8-3** are applied to the chip transistor.

Part No.	Display method
2SC2778(B, C, D)	(K) (B) K . C K . D denotes 2SC2778 parts ranking : B
2SC2404(D)	U . D
2SD601(Q, R)	Y . Q Y . R
2SD601A(Q, R)	Z . Q Z . R
2SD1030(R)	1ZR
2SB709(P-R)	A . P A . Q A . R
2SB792(Q-T)	I . Q I . R I . S I . T
2SB970(Q-S	1RQ 1RR 1RS
2SA1022(C)	E . C

Table 8-3 Chip transistor labels

⑦ **Chip FET**

The following printing is applied to the Chip FET.

Part No.	Coding method
2SK198 (Q)	(10) (Q) denotes 2SK198 parts ranking: Q

Table 8-4 Chip FET codes

⑧ **Chip Diode**

The following labels are applied to the Chip Diode.

Part No.	Coding method
MA151WA	(M) (N) denotes MA151 parts ranking : N
MA151K	M . H
MA151WK	M . T
MA151A	M . A
MA157	M . R
MA3047-L	4.7L

Table 8-5 The display of chip diode

Code	12	22	32	52	72	13	23	33	53	73	14
Resistance Value	100Ω	220Ω	330Ω	470Ω	680Ω	1kΩ	2.2kΩ	3.3kΩ	4.7kΩ	6.8kΩ	10kΩ
Code	24	34	54	74	15	25	35	55	75	16	
Resistance Value	22kΩ	33kΩ	47kΩ	68kΩ	100kΩ	220kΩ	330kΩ	470kΩ	680kΩ	1MΩ	

Table 8-2 CH VR resistance value display method in two-digit

REMOVING THE OUTSIDE COMPONENTS

DISASSEMBLING/REPLACING EACH COMPONENT

- **Before removing components, be sure to cut off the power supply.**
- **When disassembling and repairing parts, be sure to place the lens cap on the pickup tube to protect it.**

■ REMOVING THE DETACHABLE MICROPHONE

Remove the detachable microphone in the direction of arrow in **Fig. 1**.

NOTE: Be careful in handling the hood as it tears easily.

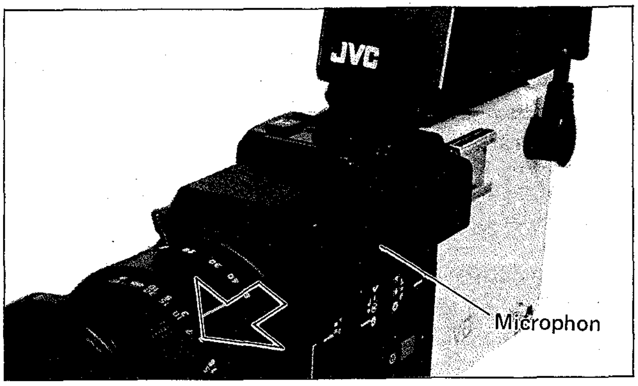


Fig. 1 Removing the detachable microphone

■ REMOVING THE ELECTRONIC VIEWFINDER (EVF)

1. Remove the connector shown in **Fig. 2-1**.
2. The viewfinder can be removed by removing the **C ring**, pulling out the pin and pulling the electronic viewfinder in the direction of the **arrow**.

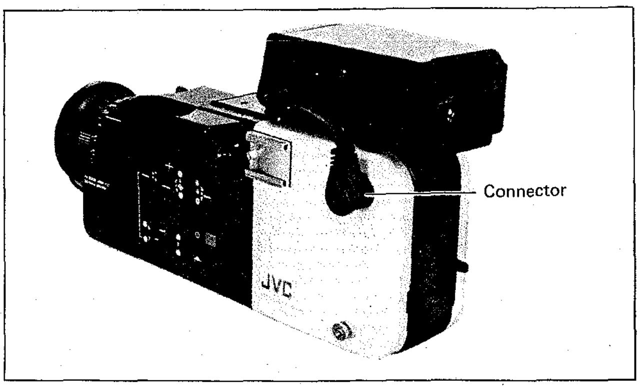


Fig. 2-1 Removing the electronic viewfinder (EVF)

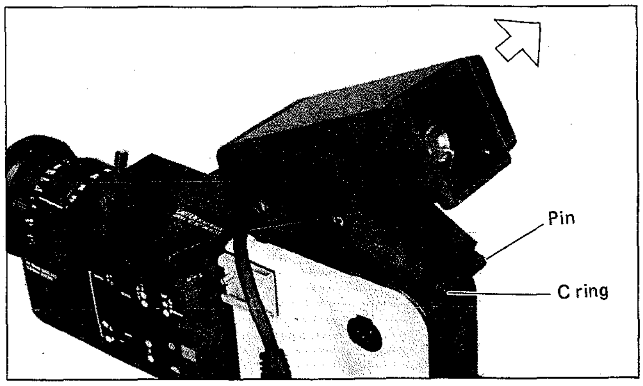


Fig. 2-2 Removing the electronic viewfinder (EVF)

■ REMOVING THE LENS

1. Removing **screw** ⓐ shown in **Fig. 3-1** will allow the grip cover to be removed.
2. Remove the **grip cover** with **connectors R** and **S** shown in **Fig. 3-2**.

NOTE: If **connectors** had removed from **grip cover**, the **S connector** goes to the top and the **R connector** goes to the bottom. Please note when mounting.

3. Remove the **screw** ⓑ shown in **Fig. 3-2**.
4. Turn the lens in the direction of the arrow as shown in **Fig. 3-3**.
5. The lens can be removed by pulling it in the direction of the arrow as shown in **Fig. 3-4**.

***GX-N4U** removal is the same as **GX-N7U** as shown in the photograph.

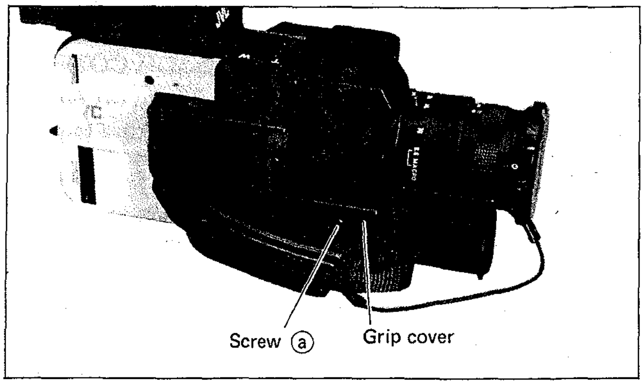


Fig. 3-1 Removing the lens (1)

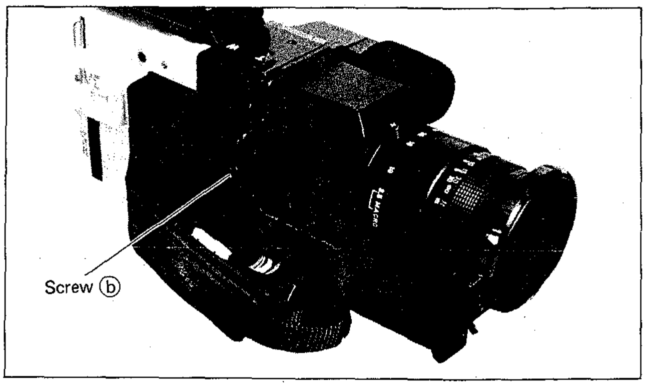


Fig. 3-2 Removing the lens (2)

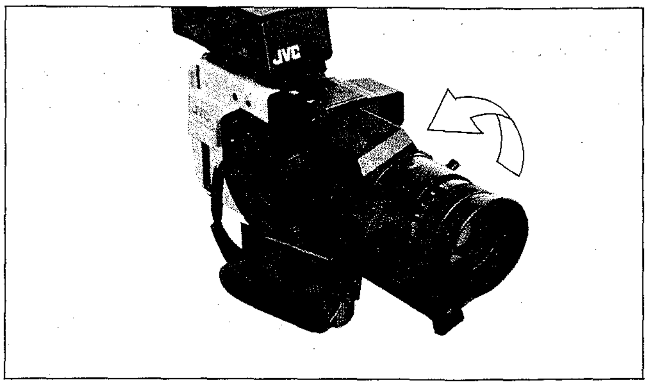


Fig. 3-3 Removing the lens (3)

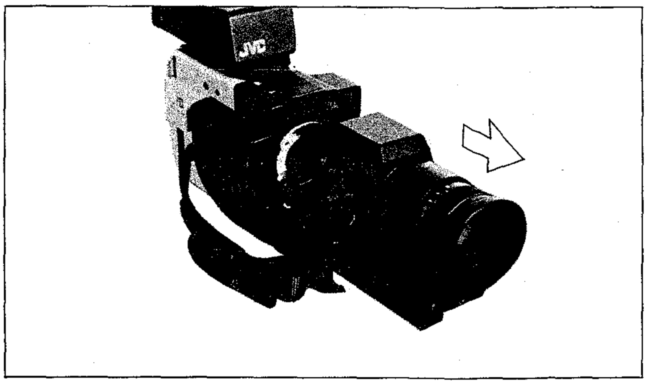


Fig. 3-4 Removing the lens (4)

■ REMOVING THE CAMERA BODY COVER

1. Remove the **two** ⓐ **screws** and **the two** ⓑ **screws** as shown in **Fig. 4-1.**
2. As shown in **Fig. 4-2,** lift section Ⓐ, and pull it in the direction of Ⓑ. Then, remove the top cover and electronic viewfinder by pulling in direction Ⓒ.

NOTE: The body cover can be removed without removing the electronic viewfinder.

3. Remove the **screws** ⓒ and ⓓ shown in **Fig. 4-3** to remove the grip cover and grip belt.

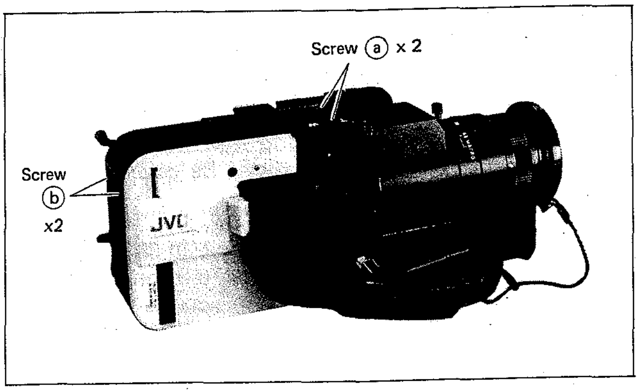


Fig. 4-1 Removing the camera body cover (1)

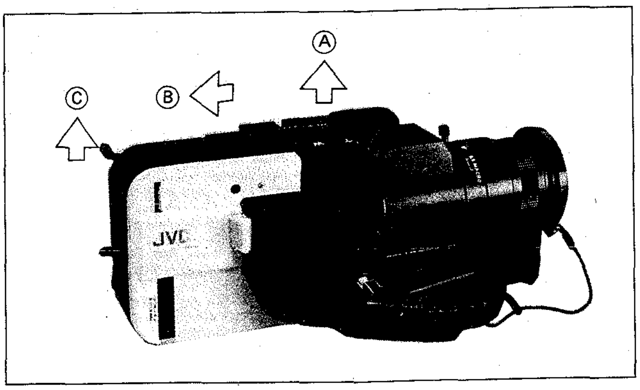


Fig. 4-2 Removing the camera body cover (2)

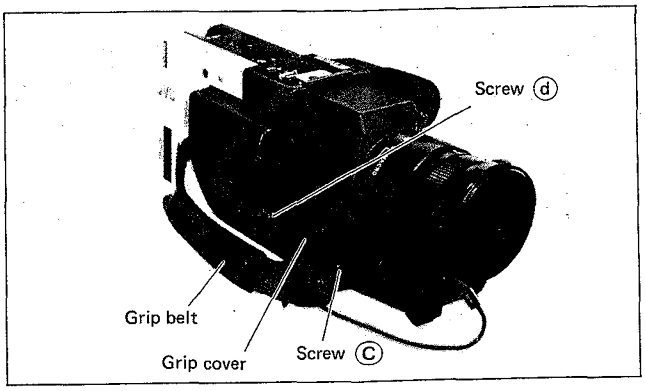


Fig. 4-3 Removing the camera body cover (3)

4. Remove screws ⓔ, ⓕ and the **two** ⓖ **screws** shown in **Fig. 4-4.**
5. Remove the **four** ⓑ **screws** shown in **Fig. 4-5.**
6. Removing the **connector** shown in **Fig. 4-6** will allow the left and right body covers to be removed.

NOTE: The tapped knob and slide knob are removed together with the cover. Be careful that they are not lost.

* Adjusting is done with the unit in this condition, however, be sure to connect **R** and **S connectors.** Remove the cover of the carrier balance VR. The bottom cover should also be removed when adjusting BATT. ALARM and SSG.

NOTE: The lens should be removed before disassembling the body cover. The lens should be replaced after the bottom cover has been disassembled.

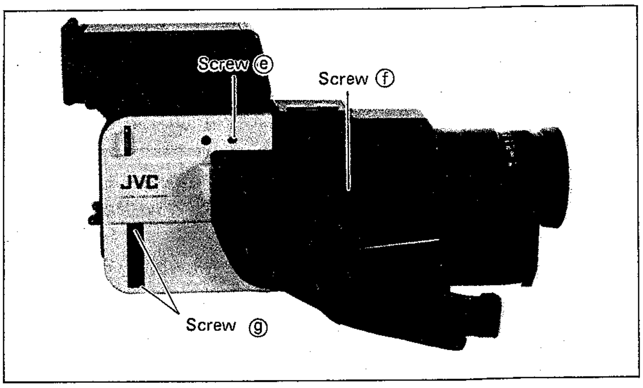

Screw ⓔ
Screw ⓕ
JVC
Screw ⓖ

Fig. 4-4 Removing the camera body cover (5)

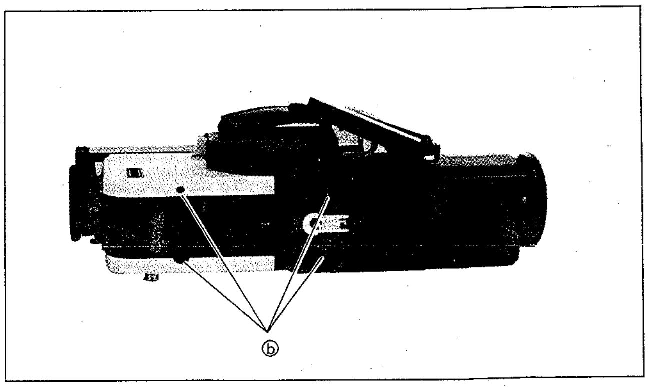


Fig. 4-5 Removing the camera body cover (6)

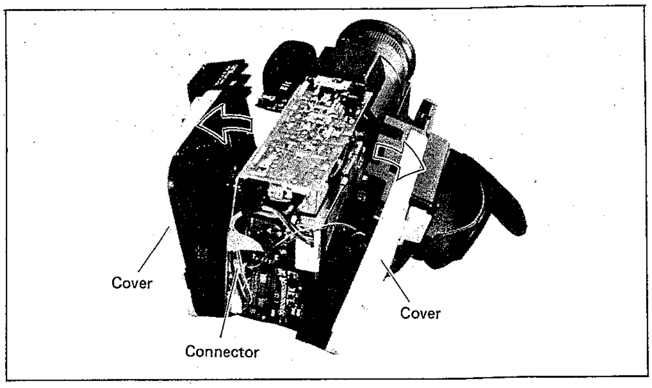

Cover
Cover
Connector

Fig. 4-6 Removing the camera body cover (7)

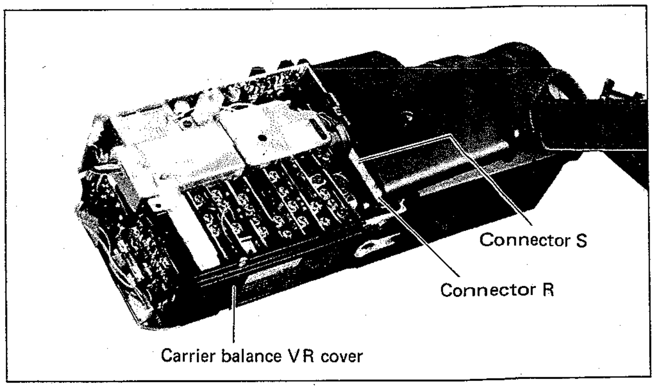

Connector S
Connector R
Carrier balance VR cover

Fig. 4-7 Removing the camera body cover (8)

■ REMOVING THE SWITCHING REGULATOR

1. The switching regulator can be removed by first removing **screw** ⓐ and the **connector** shown in **Fig. 5.**

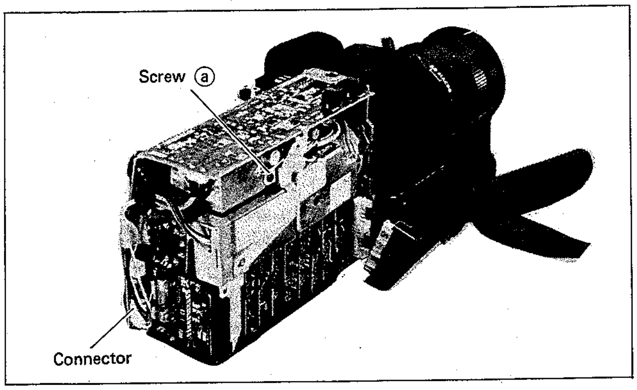

Screw ⓐ
Connector

Fig. 5 Removing the switching regulator

■ REMOVING THE MOTHER BOARD

1. The mother board can be removed by removing **screws** ⓐ and ⓑ shown in **Fig. 6.** If necessary remove connectors, etc.

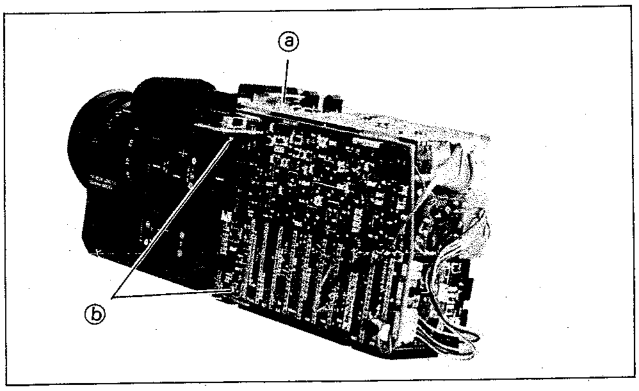


Fig. 6 Removing the mother BOARD

■ REMOVING THE PREAMPLIFIER BOARD

1. Remove the **connector** as shown in **Fig. 7-1** and pull out the **two screws** Ⓐ.
2. Remove the one piece of solder and disassemble the shield case. **(Fig. 7-1)**
3. Remove the solder at the two points shown in **Fig. 7-2** and pull out the **preamplifier BOARD.**

NOTE: Be careful that you don't damage the target pin after removing the preamplifier.

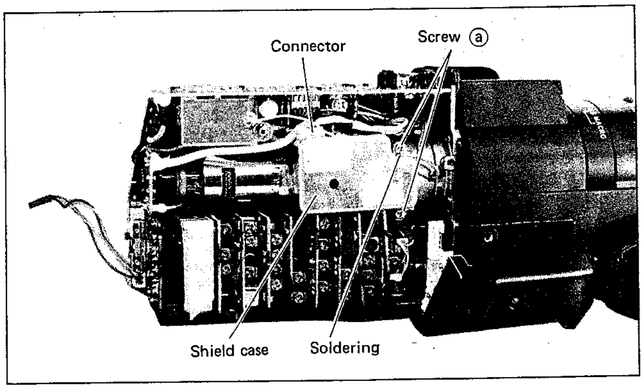

Connector
Screw ⓐ
Shield case
Soldering

Fig. 7-1 Removing the preamplifier BOARD (1)

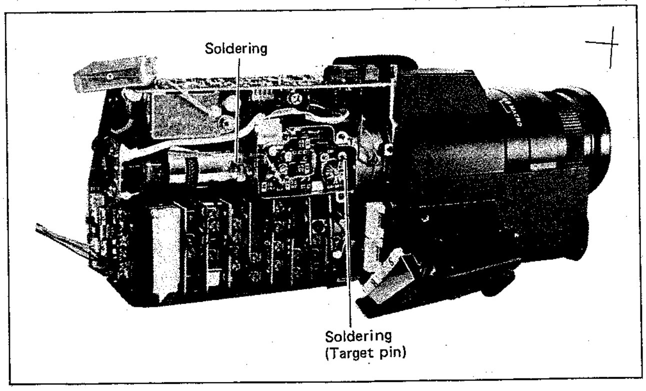

Soldering
Soldering
(Target pin)

Fig. 7-2 Removing the preamplifier BOARD (2)

■ REPLACING THE PICKUP TUBE

* If only replacing the pickup tube, do not remove the preamplifier.

1. Remove the **two screws** ⓐ shown in **Fig. 8-1**.
2. As shown in **Fig. 8-2**, remove **screw** ⓑ and pull the DEF board in the direction of the **arrow** Ⓐ.
   After removing the tube socket, gently pull the **DEF yoke** in the direction of the **arrow** Ⓑ.

NOTE: Avoid pulling forcefully on the preamplifier and hold the **DEF yoke section.**

3. Remove the **LPF & BIAS light** shown in **Fig. 8-2.**
4. Remove the **DEF yoke** by removing the **connector** and soldered points shown in **Fig. 8-3.**
5. Loosen the **screw** Ⓒ shown in **Fig. 8-4,** press the **lock** shown in **Fig. 8-5** in the direction of the **arrow** and pull out the **pickup tube** in the direction of the **arrow** shown in **Fig. 8-4.**

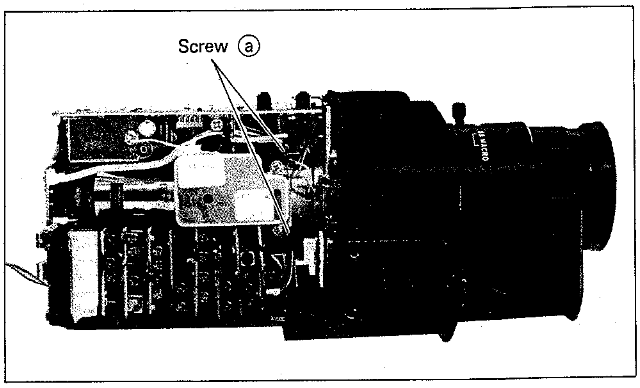


Fig. 8-1 Removing the pickup tube (1)

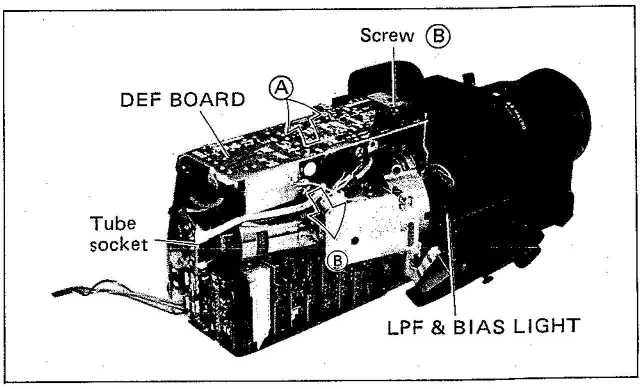

Screw Ⓑ
DEF BOARD
Ⓐ
Tube socket
Ⓑ
LPF & BIAS LIGHT

Fig. 8-2 Removing the pickup tube (2)

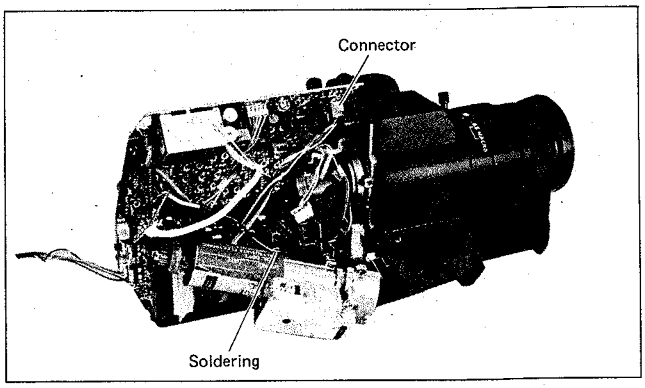

Connector
Soldering

Fig. 8-3 Removing the pickup tube (3)

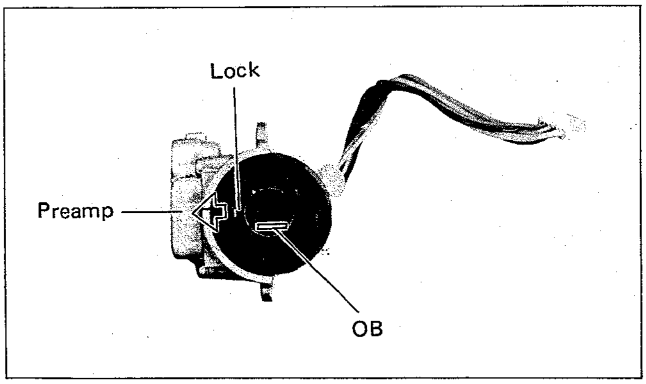

Lock
Preamp
OB

Fig. 8-5 Removing the pickup tube (5)

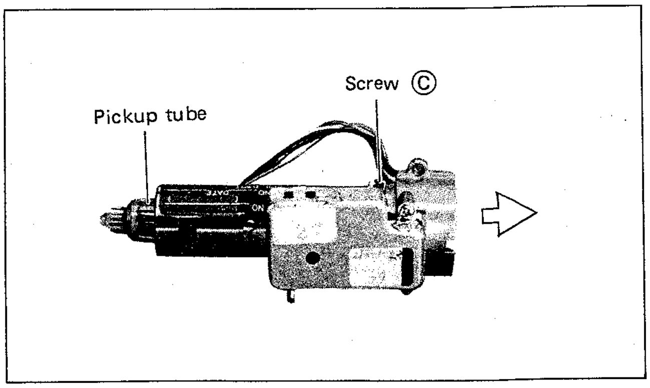

Screw Ⓒ
Pickup tube

Fig. 8-4 Removing the pickup tube (4)

■ DISASSEMBLY & REPLACEMENT OF BIAS LIGHT & OPTICAL LOW-PASS FILTER

1. Remove the **connector** shown in **Fig. 9-1**.
2. **Fig. 9-2** shows disassembly method.

NOTE: When replacing the **BIAS light board** and **LPF**, be sure to confirm which sides are back and front and which are top and bottom.

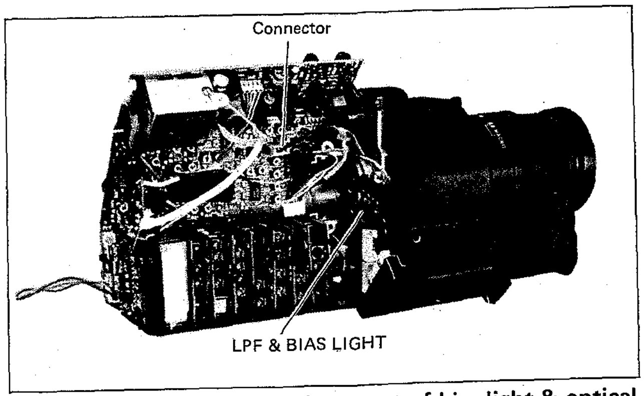

Connector
LPF & BIAS LIGHT

Fig. 9-1 **Disassembly & replacement of bias light & optical low-pass filter**

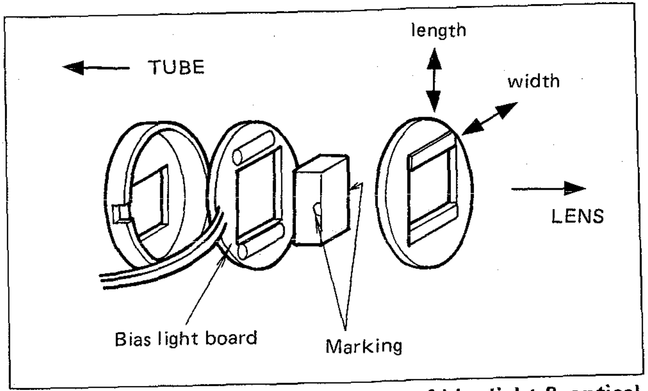

length
TUBE
width
LENS
Bias light board
Marking

Fig. 9-2 **Disassembly & replacement of bias light & optical low-pass filter**

■ REMOVING THE GRIP BELT

1. Remove the **two screws** ⓐ shown in **Fig. 10**.

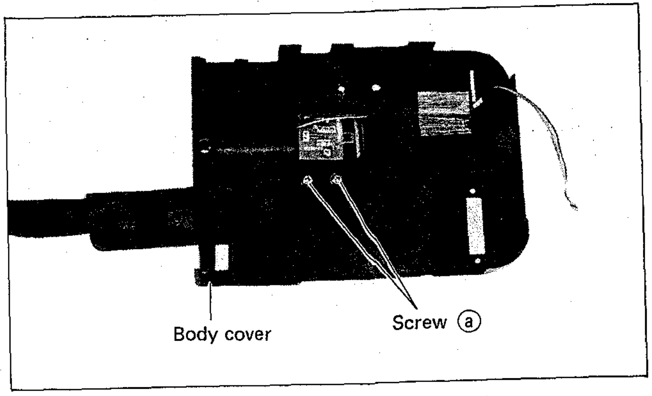

Body cover
Screw ⓐ

Fig. 10 **Removing the grip belt**

■ REMOVING THE VTR SWITCH

1. Remove the **two screws** ⓐ shown in **Fig. 11-1** and detach the **VTR SW board.**
2. As shown in **Fig. 11-2,** remove the **knob stoppers** in the direction of the **arrow,** then remove the **VTR START/STOP knob.**

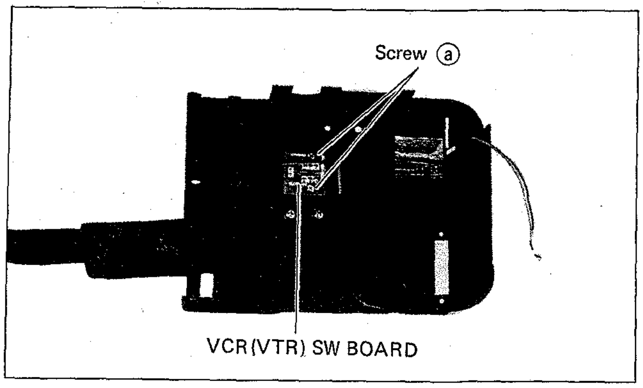

Screw ⓐ
VCR(VTR) SW BOARD

Fig. 11-1 Removing the VTR switch (1)

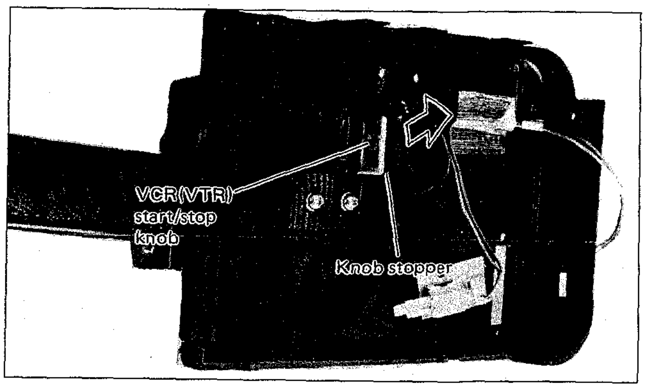

VCR(VTR) start/stop knob
Knob stopper

Fig. 11-2 Removing the VTR switch (2)

■ DISASSEMBLING THE ELECTRONIC VIEW-FINDER (EVF)

1. Remove the **E ring** shown in **Fig. 12-1,** pull out the **shaft** and detach the **EVF arm.**
2. While pressing the **button** Ⓐ shown in **Fig. 12-2,** pull the **EVF hood** in the direction of the **arrow.**

NOTE: FOCUS and BRIGHT can be adjusted while EVF hood is removed.

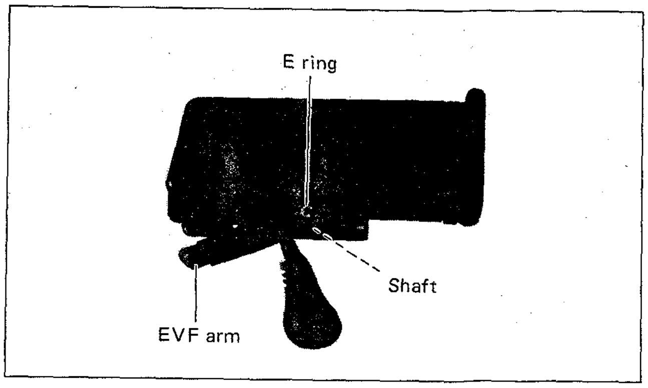

E ring
Shaft
EVF arm

Fig. 12-1 Disassembling the EVF (1)

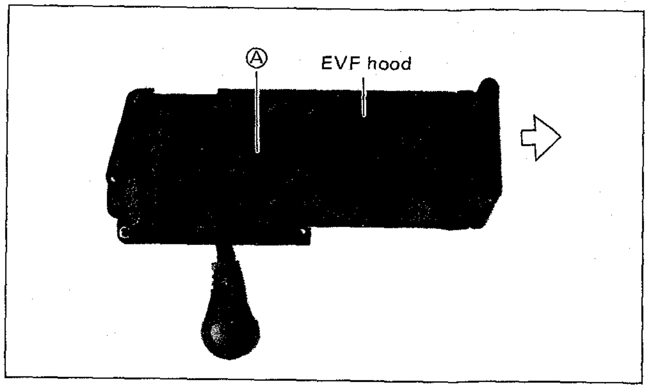


Fig. 12-2 Disassembling the EVF (2)

3. To disassemble **EVF hood,** remove the **eye cap** in the direction of the **arrow** as shown in **Fig. 12-3.**
4. Press the **clip** securing the lens in the direction of the **arrow** and remove **lens,** as shown in **Fig. 12-4.**
5. Pull the **lock plate** in the direction of the **arrow** shown in **Fig. 12-5.**

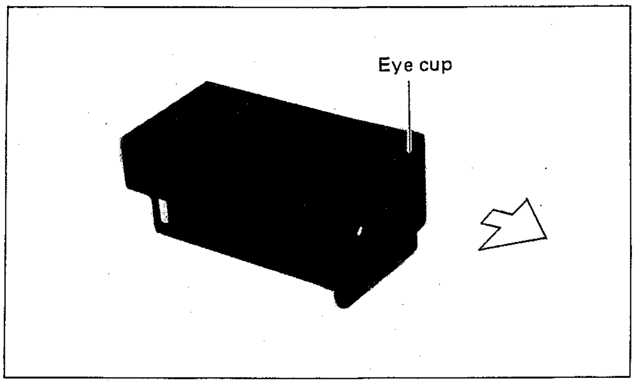


Fig. 12-3 Disassembling the EVF (3)

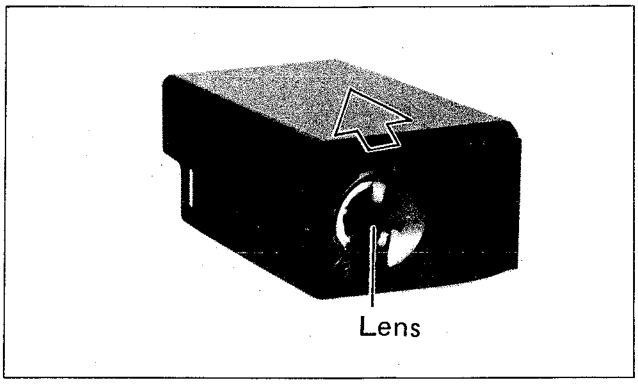


Fig. 12-4 Disassembling the EVF (4)

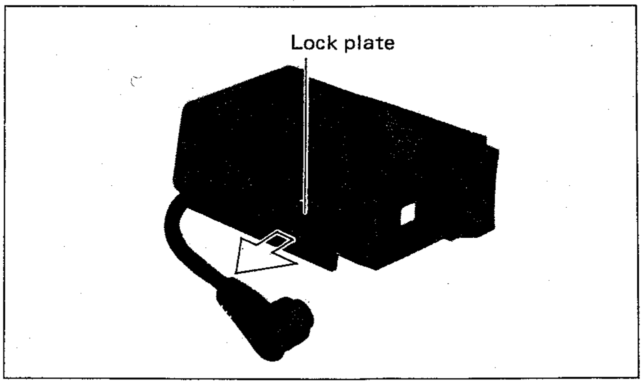


Fig. 12-5 Disassembling the EVF (5)

■ REMOVING THE EVF, BOARD AND CRT

1. Remove the **two screws** ⓐ shown in **Fig. 13-1.**
2. Remove the **EVF cover** by lifting in the direction of the **arrow** as shown in **Fig. 13-2.**
3. Removing the **CRT socket** and **connector** shown in **Fig. 13-3** will allow the circuit board to be removed.
4. Removing the **two** ⓑ **screws** shown in **Fig. 13-4** will allow disassembly of the **CRT** and **DY assembly.**

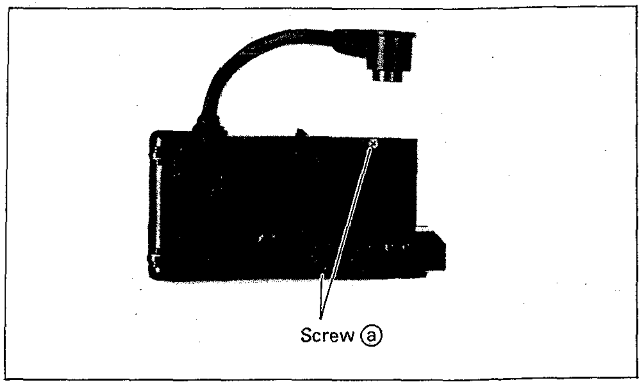


Fig. 13-1 **Removing the EVF board and CRT (1)**

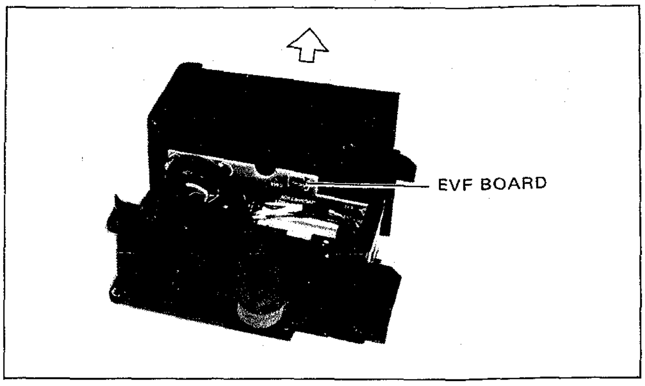


Fig. 13-2 **Removing the EVF board and CRT (2)**

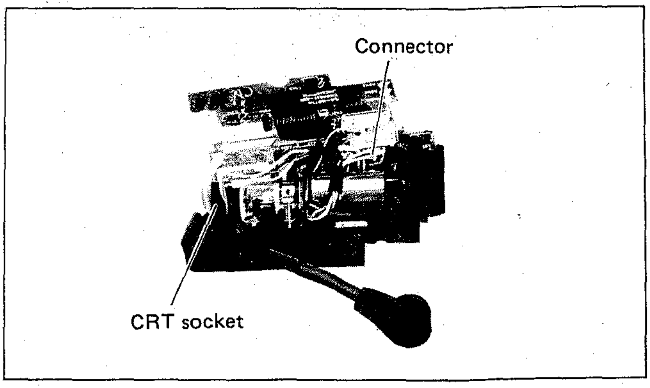


Fig. 13-3 **Removing the EVF board and CRT (3)**

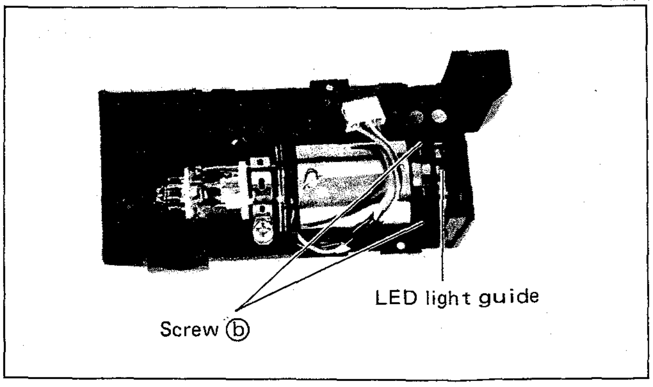


Fig. 13-4 **Removing the EVF board and CRT (4)**

Printed in Japan
8405 NISSHO
SDK

GX-N7U/UT
GX-N4U/UT
ADJUSTMENT

CONTENTS

MEASURING INSTRUMENTS, TOOLS AND FIXTURES FOR ADJUSTMENTS 2
INSTRUMENTS CONNECTIONS AND SET UP 3
PRIOR TO STARTING ADJUSTMENT 3
MAIN PARTS ARRANGEMENT 4
LOCATIONS OF BOARDS AND TEST POINTS 5
ADJUSTMENTS LOCATION 6
ADJUSTING PROCEDURES 9
ADJUSTING STEP 10
1. ADJUSTMENT OF THE SSG (SYNC SIGNAL GENERATOR) 12
2. ADJUSTMENT OF THE DEFLECTION SYSTEM 13
3. ADJUSTMENT OF THE SIGNAL SYSTEM 19
4. ADJUSTMENT OF THE ELECTRONIC VIEWFINDER 39

GX-N7U/UT (No. 5506)
GX-N4U/UT (No. 5519)
May. 1984

MEASURING INSTRUMENTS, TOOLS AND FIXTURES FOR ADJUSTMENTS

■ MEASURING INSTRUMENTS

1. Oscilloscope	1
2. Color monitor TV (NTSC-type) Color temperature: 9,300K.	1
3. Lights Color temperature: 3,200K.	1 or 2
4. Frequency counter	1
5. DC voltmeter	1
6. Power supply	one each
7. Vectorscope (NTSC-type) Used only if necessary	1

6. Power supply sub-items:

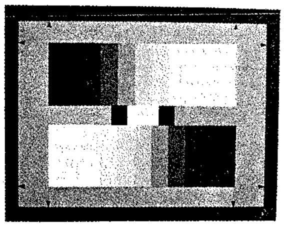
- **1) AC adaptor**
  - CV-AC212 or CV-AC212 (S) (in USA)
  - CV-AC312 or CV-AC312 (S) (in CANADA)
  - CV-AC222 or CV-AC222 (S) (in CHILE)
- **2) Camera cable**
  - VC-444-2E and VC-409-3 (in CHILE)
  - VC-444-2E and VC-408-3 (in USA and CANADA)

■ TOOLS AND FIXTURES

1. PATTERN

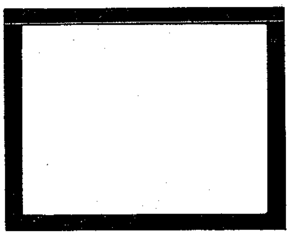
(Note)
Reflection-type patterns eventually suffer from drops in signal output level or loss of output uniformity. Periodic replacement is recommended.

(Gray scale pattern)



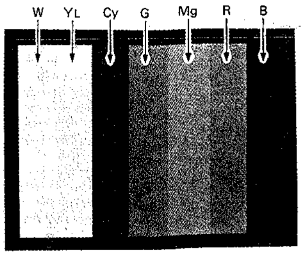
GS-2A
Reflection-type ($\gamma = 2.2$)

(White pattern)



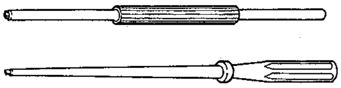
WC-2A
Reflection-type

(Color bar pattern)

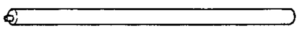


Reflection-type : CC-2A
Transmission-type : CC-2T

2. DRIVERS

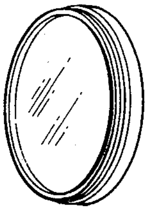


Adj. driver



Back focus adj. driver **A-7541**

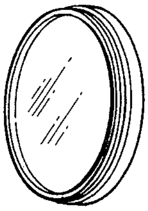
3. RED FILTER



R60-46S (46ϕ)

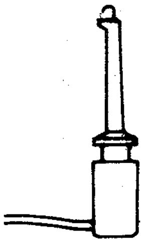
Equivalent filter using KODAK wratten No. 25 gelatin filter

4. COLOR TEMP. CONVERSION FILTER



CIO Color temperature conversion filter

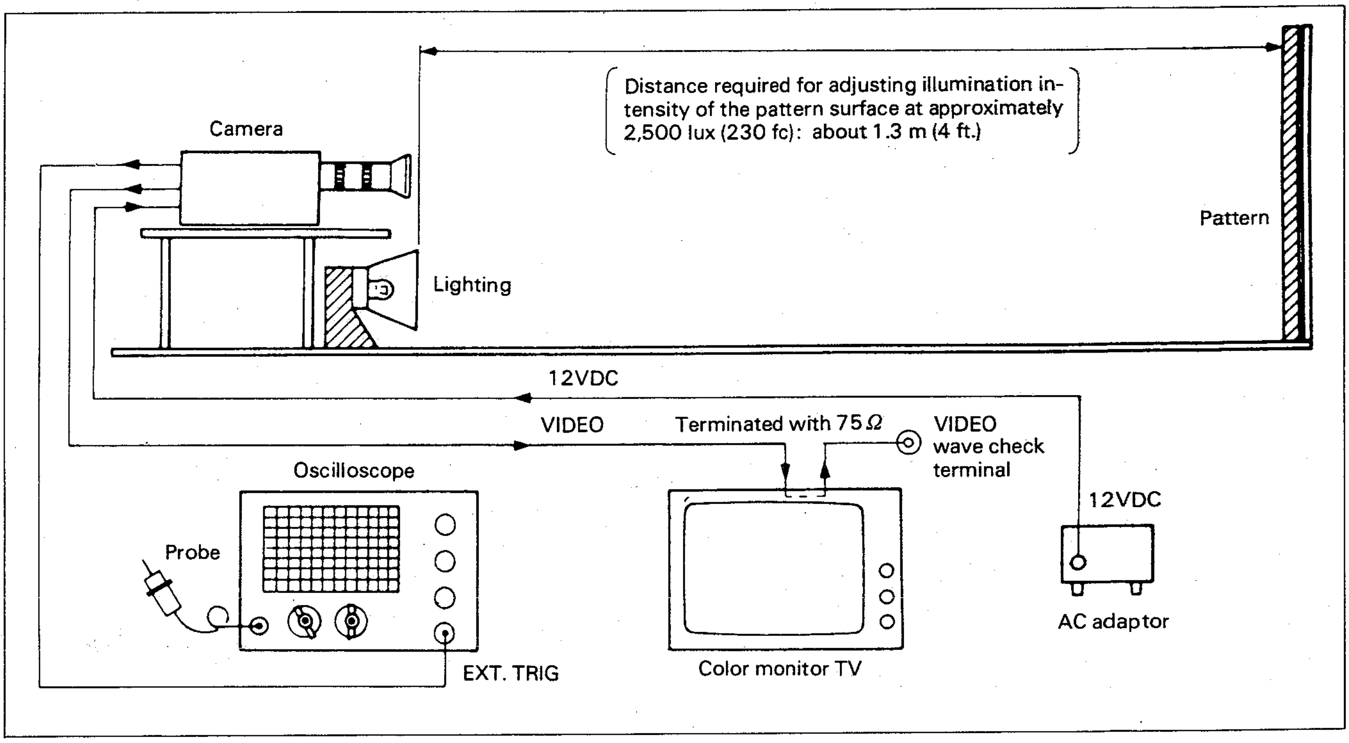
5. PIN CLIP



MJ-025

Slightly bending the pin tip facilitates its use.

INSTRUMENT CONNECTIONS AND SETUP


Distance required for adjusting illumination intensity of the pattern surface at approximately 2,500 lux (230 fc): about 1.3 m (4 ft.)
Camera
Pattern
Lighting
12VDC
VIDEO
Terminated with 75 Ω
VIDEO wave check terminal
Oscilloscope
12VDC
Probe
AC adaptor
EXT. TRIG
Color monitor TV

PRIOR TO STARTING ADJUSTMENT

(1) **AGING A NEW PICKUP TUBE**
New pickup tubes must be aged (run) at least 2 – 3 hours to stabilize their characteristics. During aging, be sure to adjust V. HEIGHT VR of the camera so that scanning is as wide as possible. Scanning must slightly overlap the black mask portion.
After aging, readjust the camera as explained in this manual. (Some items only need to be checked.)

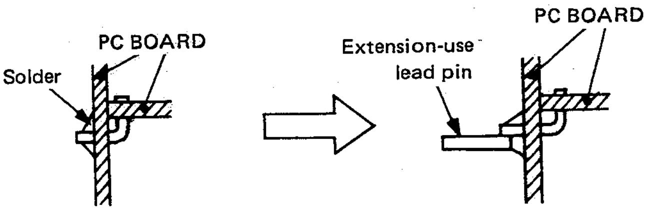
(2) **Warming up the camera**
Turn on the camera at least 10 minitues before making any adjustments.

(3) **Lighting**
- Adjust the distance between the light and the subject so that the illumination on the subject is about 2,500 lux.
- Make the illumination over the entire subject surface as uniform as possible.

(4) Connection to external trigger terminals of oscilloscope
The following trigger signals must be monitored separately:
- **Horizontal trigger signal**
H3 (blue wire) or H4 (red wire) connector of the VIDEO PROCESS BOARD.
- **Vertical trigger signal**
H1 (orange wire) or H2 (yellow wire) connector of the VIDEO PROCESS BOARD.

(5) **Caution "High Voltage"**
Some parts of this camera, carry high voltages, such as the high voltage transformer, high voltage module and EVF, exercise extreme care during adjustment.

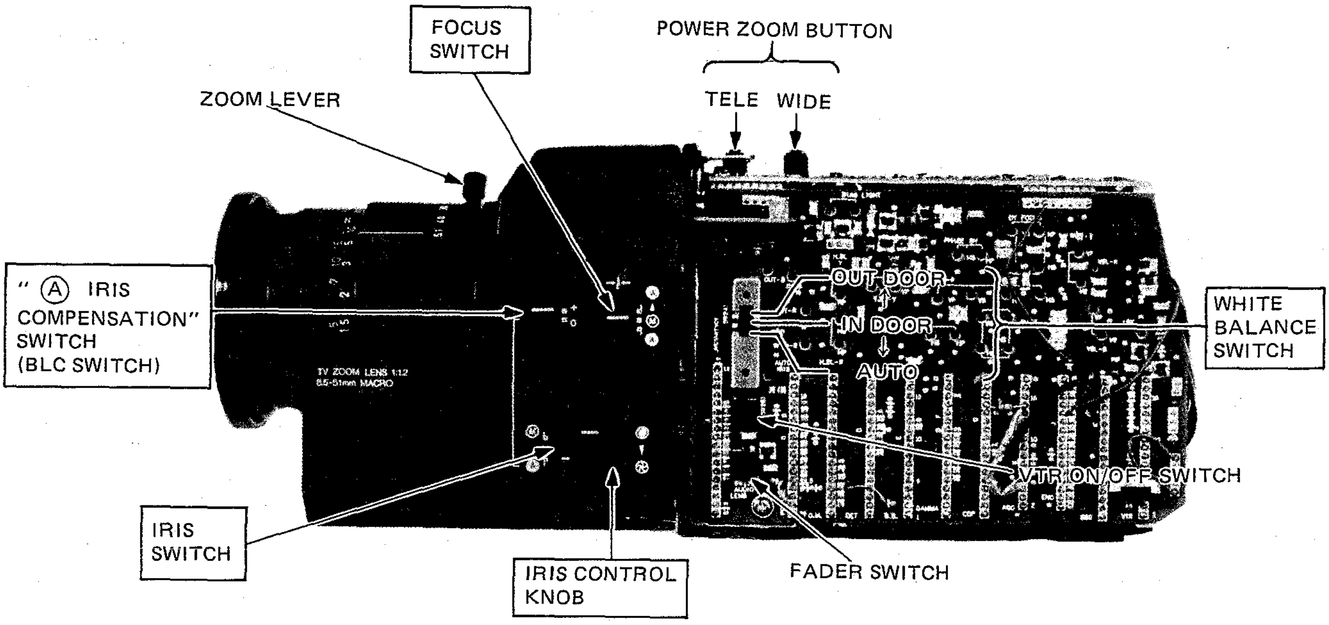
(6) **Test points**
The pins of respective PC BOARD modules of this camera are used as the test points, making it very difficult to connect onto these pins. it is therefore recommended that axtension-use lead pins be attached to those pins frequently used.


PC BOARD
Solder
Extension-use lead pin
PC BOARD

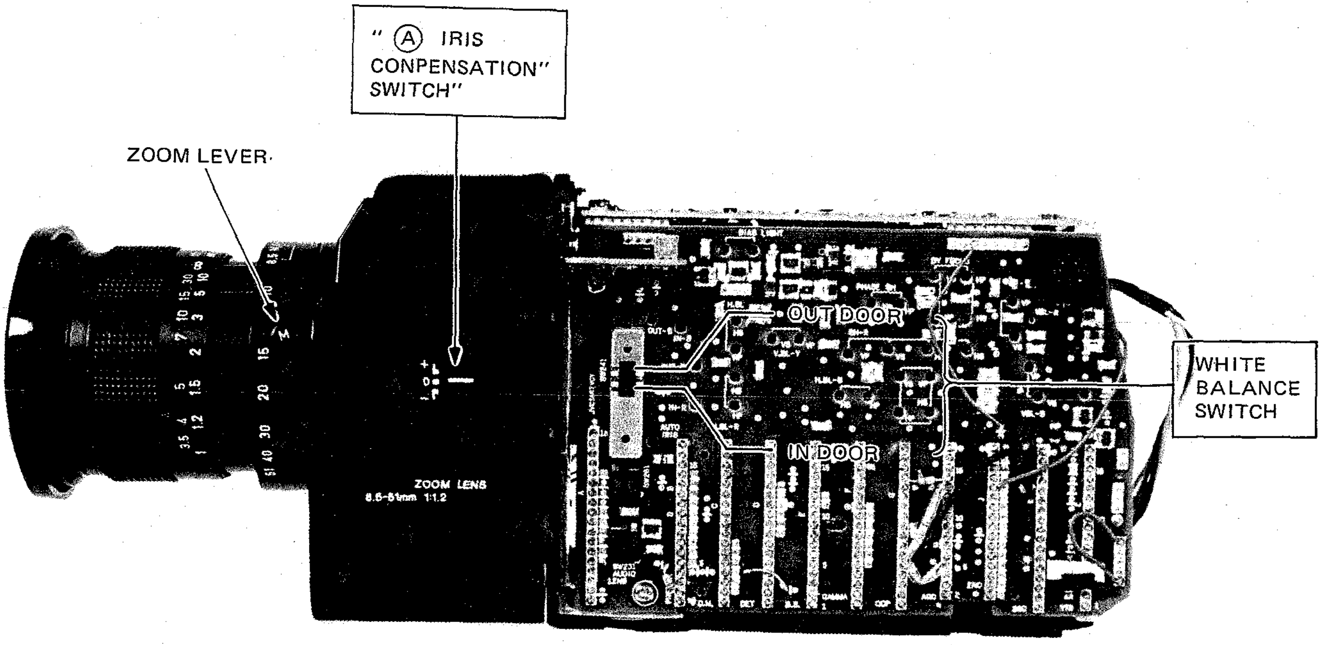
* (B7) (B8) (F12) (F13) (F14) (H6) (H7) and others

MAIN PARTS ARRANGEMENT CHART

*** GX-N7U/UT**


FOCUS SWITCH
POWER ZOOM BUTTON
TELE
WIDE
ZOOM LEVER
" Ⓐ IRIS COMPENSATION" SWITCH (BLC SWITCH)
OUT DOOR
IN DOOR
AUTO
WHITE BALANCE SWITCH
VTR ON/OFF SWITCH
IRIS SWITCH
IRIS CONTROL KNOB
FADER SWITCH
TV ZOOM LENS 1:1.2
8.5-51mm MACRO

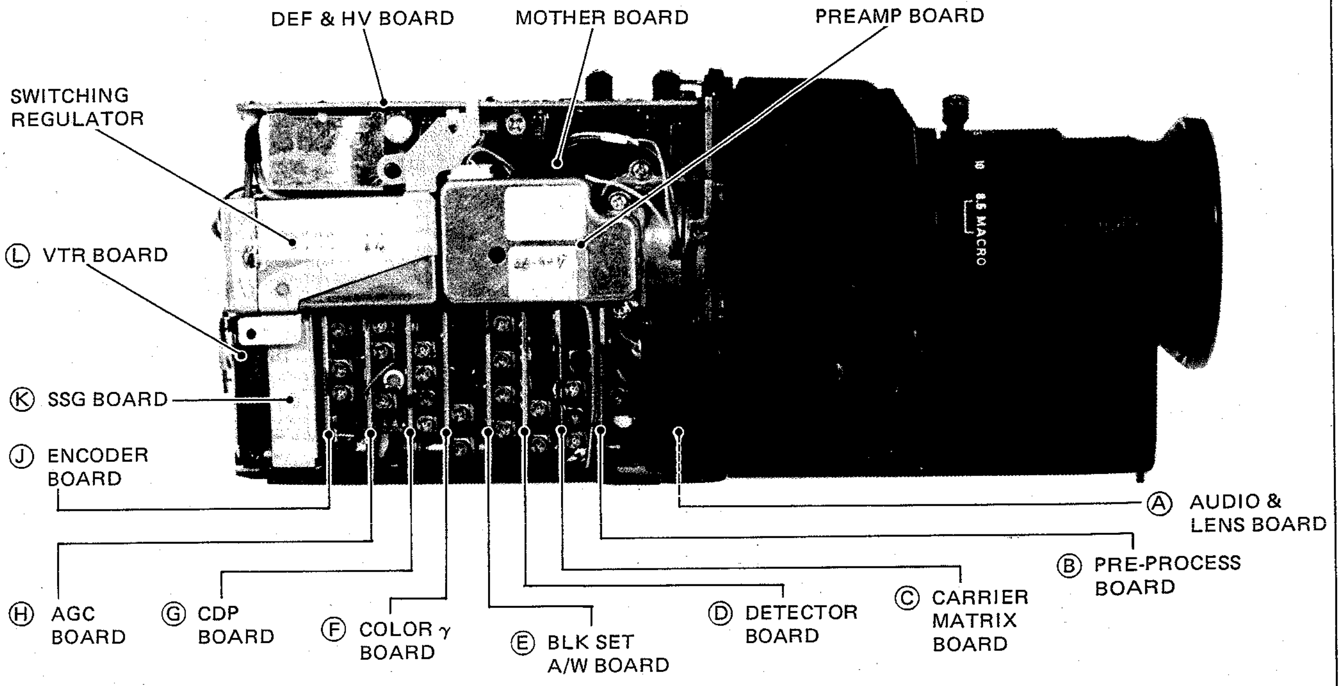
*** GX-N4U/UT**


" Ⓐ IRIS CONPENSATION" SWITCH"
ZOOM LEVER
OUT DOOR
IN DOOR
WHITE BALANCE SWITCH
ZOOM LENS
8.5-51mm 1:1.2

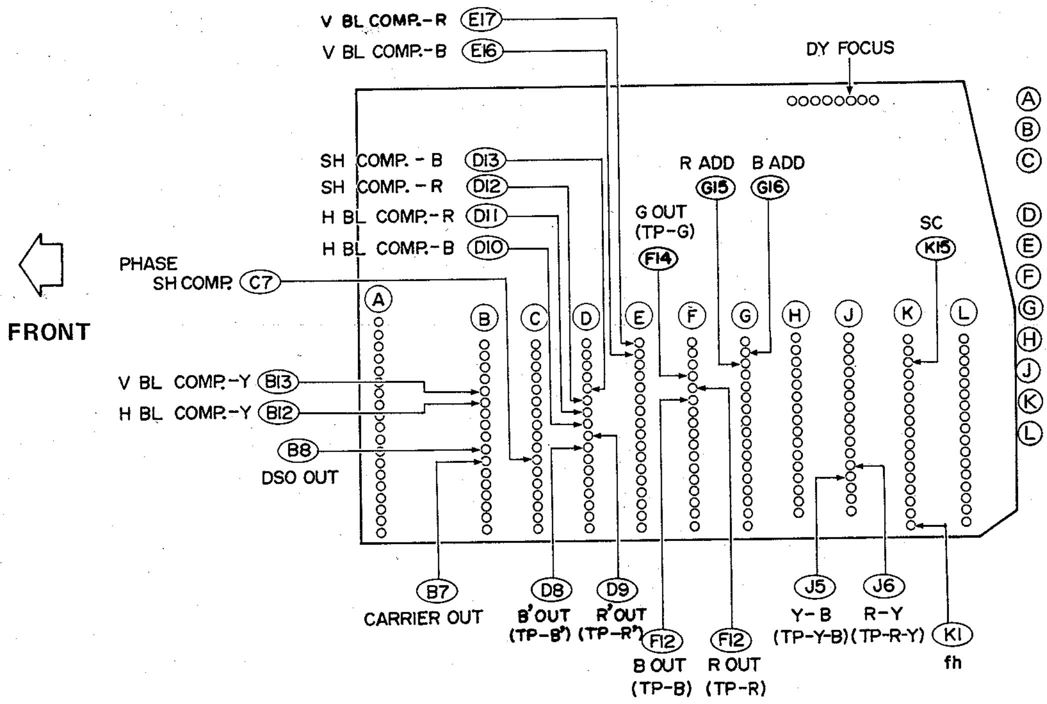
*On GX-N4U/UT, the functions of "VTR ON/OFF," "FADER," and "ELECTRIC ZOOM" are not provided. Also, the iris setting is made only to AUTO IRIS.

LOCATIONS OF BOARDS AND TESTPOINTS

○ BOARDS LOCATIONS

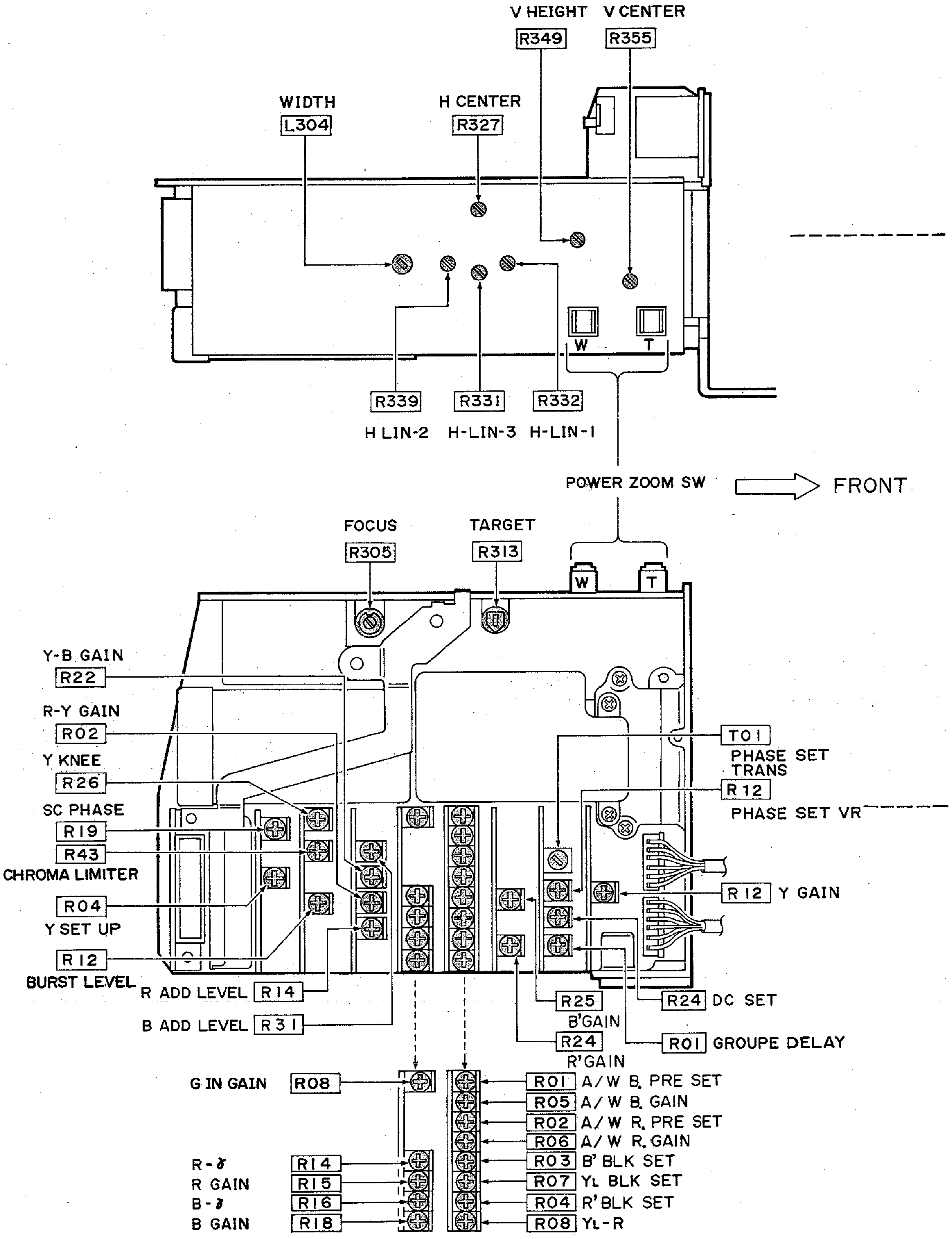

DEF & HV BOARD
MOTHER BOARD
PREAMP BOARD
SWITCHING REGULATOR
Ⓛ VTR BOARD
Ⓚ SSG BOARD
Ⓙ ENCODER BOARD
Ⓐ AUDIO & LENS BOARD
Ⓑ PRE-PROCESS BOARD
Ⓒ CARRIER MATRIX BOARD
Ⓓ DETECTOR BOARD
Ⓔ BLK SET A/W BOARD
Ⓕ COLOR γ BOARD
Ⓖ CDP BOARD
Ⓗ AGC BOARD
10
8.5 MACRO

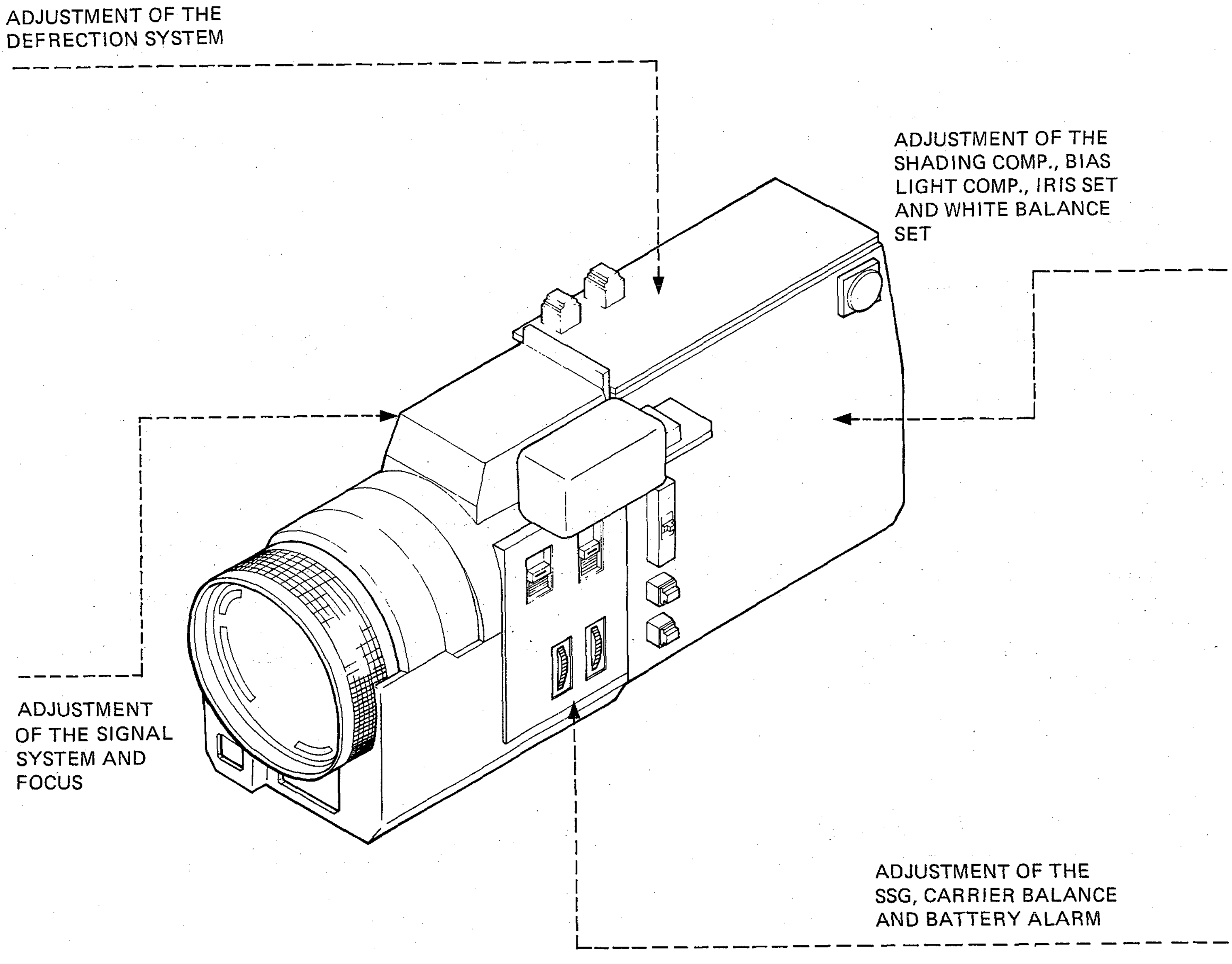
○ TEST POINTS LOCATIONS

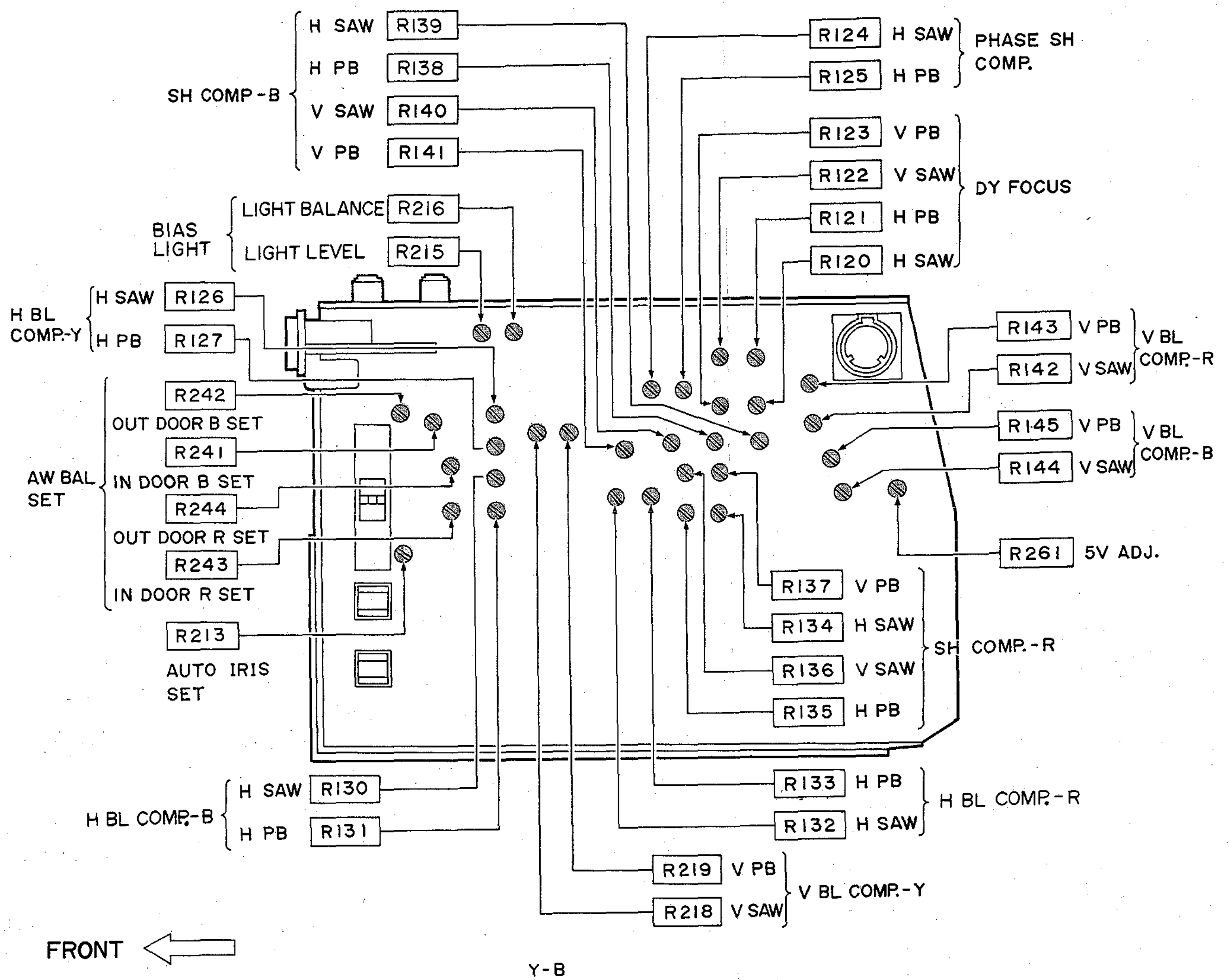

V BL COMP.-R E17
V BL COMP.-B E16
DY FOCUS
SH COMP. - B D13
SH COMP. - R D12
H BL COMP.-R D11
H BL COMP.-B D10
R ADD G15
B ADD G16
G OUT (TP-G) F14
SC K15
PHASE SH COMP. C7
FRONT
A
B
C
D
E
F
G
H
J
K
L
V BL COMP.-Y B13
H BL COMP.-Y B12
B8 DSO OUT
B7 CARRIER OUT
D8 B'OUT (TP-B')
D9 R'OUT (TP-R')
F12 B OUT (TP-B)
F12 R OUT (TP-R)
J5 Y-B (TP-Y-B)
J6 R-Y (TP-R-Y)
K1 fh

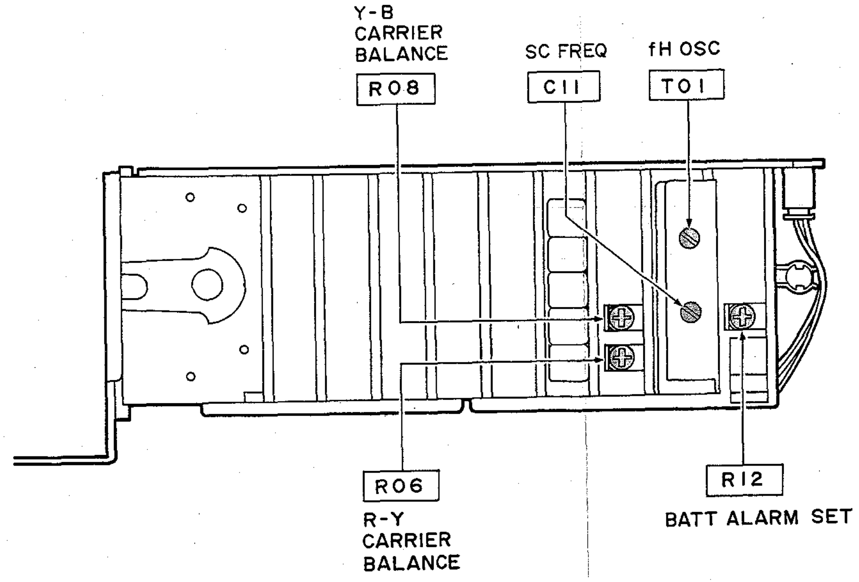
Ⓐ : AUDIO & LENS BOARD
Ⓑ : PRE-PROCESS BOARD
Ⓒ : CARRIER MATRIX BOARD
Ⓓ : DETECTOR BOARD
Ⓔ : BLACK SET BOARD
Ⓕ : COLOR γ BOARD
Ⓖ : CDP BOARD
Ⓗ : AGC BOARD
Ⓙ : ENCODER BOARD
Ⓚ : SSG BOARD
Ⓛ : VTR TRIGGER, RUN & BATTERY ALARM BOARD

ADJUSTMENT LOCATIONS


V HEIGHT
R349
V CENTER
R355
WIDTH
L304
H CENTER
R327
W
T
R339
H LIN-2
R331
H-LIN-3
R332
H-LIN-1
POWER ZOOM SW
FRONT
FOCUS
R305
TARGET
R313
W
T
Y-B GAIN
R22
R-Y GAIN
R02
Y KNEE
R26
SC PHASE
R19
R43
CHROMA LIMITER
R04
Y SET UP
R12
BURST LEVEL
R ADD LEVEL
R14
B ADD LEVEL
R31
T01
PHASE SET TRANS
R12
PHASE SET VR
R12
Y GAIN
R25
B'GAIN
R24
DC SET
R24
R'GAIN
R01
GROUPE DELAY
G IN GAIN
R08
R-γ
R14
R GAIN
R15
B-γ
R16
B GAIN
R18
R01
A/W B. PRE SET
R05
A/W B. GAIN
R02
A/W R. PRE SET
R06
A/W R. GAIN
R03
B' BLK SET
R07
YL BLK SET
R04
R' BLK SET
R08
YL-R


ADJUSTMENT OF THE DEFRECTION SYSTEM
ADJUSTMENT OF THE SHADING COMP., BIAS LIGHT COMP., IRIS SET AND WHITE BALANCE SET
ADJUSTMENT OF THE SIGNAL SYSTEM AND FOCUS
ADJUSTMENT OF THE SSG, CARRIER BALANCE AND BATTERY ALARM


SH COMP-B
H SAW R139
H PB R138
V SAW R140
V PB R141
R124 H SAW
R125 H PB
PHASE SH COMP.
R123 V PB
R122 V SAW
R121 H PB
R120 H SAW
DY FOCUS
BIAS LIGHT
LIGHT BALANCE R216
LIGHT LEVEL R215
H BL COMP.-Y
H SAW R126
H PB R127
R143 V PB
R142 V SAW
V BL COMP.-R
R145 V PB
R144 V SAW
V BL COMP.-B
AW BAL SET
R242
OUT DOOR B SET
R241
IN DOOR B SET
R244
OUT DOOR R SET
R243
IN DOOR R SET
R261 5V ADJ.
R137 V PB
R134 H SAW
R136 V SAW
R135 H PB
SH COMP.-R
R213
AUTO IRIS SET
H BL COMP.-B
H SAW R130
H PB R131
R133 H PB
R132 H SAW
H BL COMP.-R
R219 V PB
R218 V SAW
V BL COMP.-Y
FRONT


Y-B CARRIER BALANCE
R08
SC FREQ
C11
fH OSC
T01
R06
R-Y CARRIER BALANCE
R12
BATT ALARM SET

ADJUSTMENT PROCEDURES

1. These adjustment procedures are applicable to both **GX-N7U/UT** and **GX-N4U/UT**. However, since slight differences exist on the iris setting or others, conduct adjustments by confirming each time the correct adjusting procedures.

- **PRESETTING FOR GX-N7U/UT**

Before starting the adjustment procedure, preset the following switches as indicated.

1) **Iris switch** → " Ⓜ " (Manual)
2) **" A iris compensation" switch** → **"0"**
3) **White balance button** → " 💡 " **(In-door)**
4) **Focus switch** → **"MANUAL"**

(Note) The AGC turns OFF when IRIS SWITCH is set to MANUAL, and ON when the switch is set to AUTO.

- **PRESETTING FOR GX-N4U/UT**

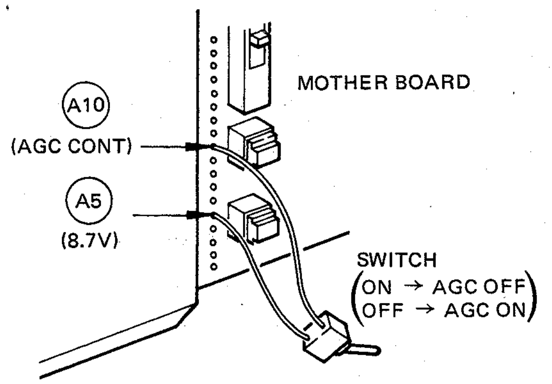
Before starting the adjustment procedure, preset the following switches as indicated.

1) **" A iris compensation" switch** → **"0"**
2) **White balance button** → " 💡 " **(In-door)**

On **GX-N4U/UT,** only the AUTO IRIS is provided. Regarding the adjustment procedure where this item appears with instruction reading "set the IRIS CONTROL SWITCH TO AUTO," no adjusting step is required.

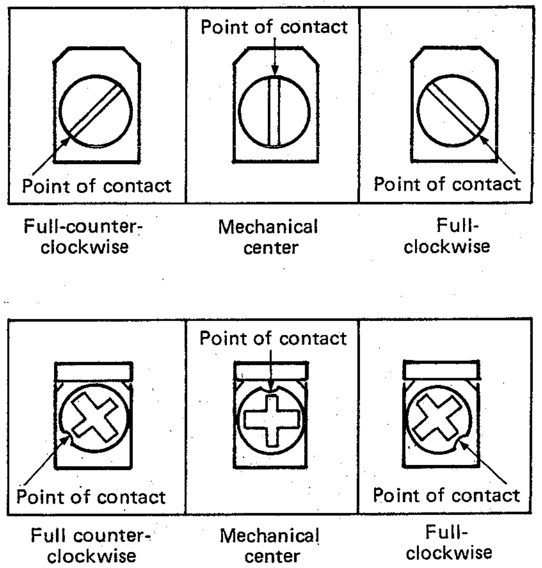
(Note) When turning the AGC OFF on **GX-N4U/UT,** conduct the following procedures.

1. As shown in the figure, install the switch by connecting a wire to (A10) (AGC CONT.) and (A5) (8.7V).
2. When the switch is turned ON, the AGC turns OFF; when the switch is turned OFF, the AGC turns ON. After completing the wire connection, confirm that the switch/AGC relation ship exists.


MOTHER BOARD
(A10)
(AGC CONT)
(A5)
(8.7V)
SWITCH
(ON → AGC OFF)
(OFF → AGC ON)

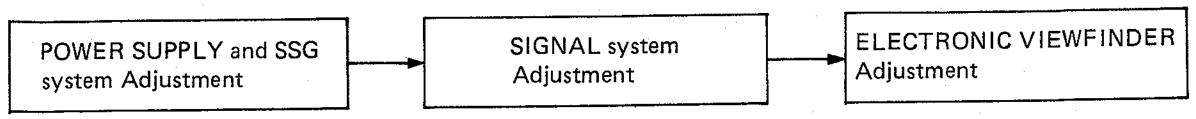
2. Very thin wires are used for wiring connection between multiple circuit boards. Removing and replacing the circuit boards several times during adjustment may cause the connections to be broken.
3. Connect the **Ground** through the chassis frame.
4. **Repeat adjusting procedures** until the best condition is attained.

(Note) 1. Chip VR rotating position is designated as shown in the figure below for the convenience of explanation, since the chip VR can be rotated 360°.

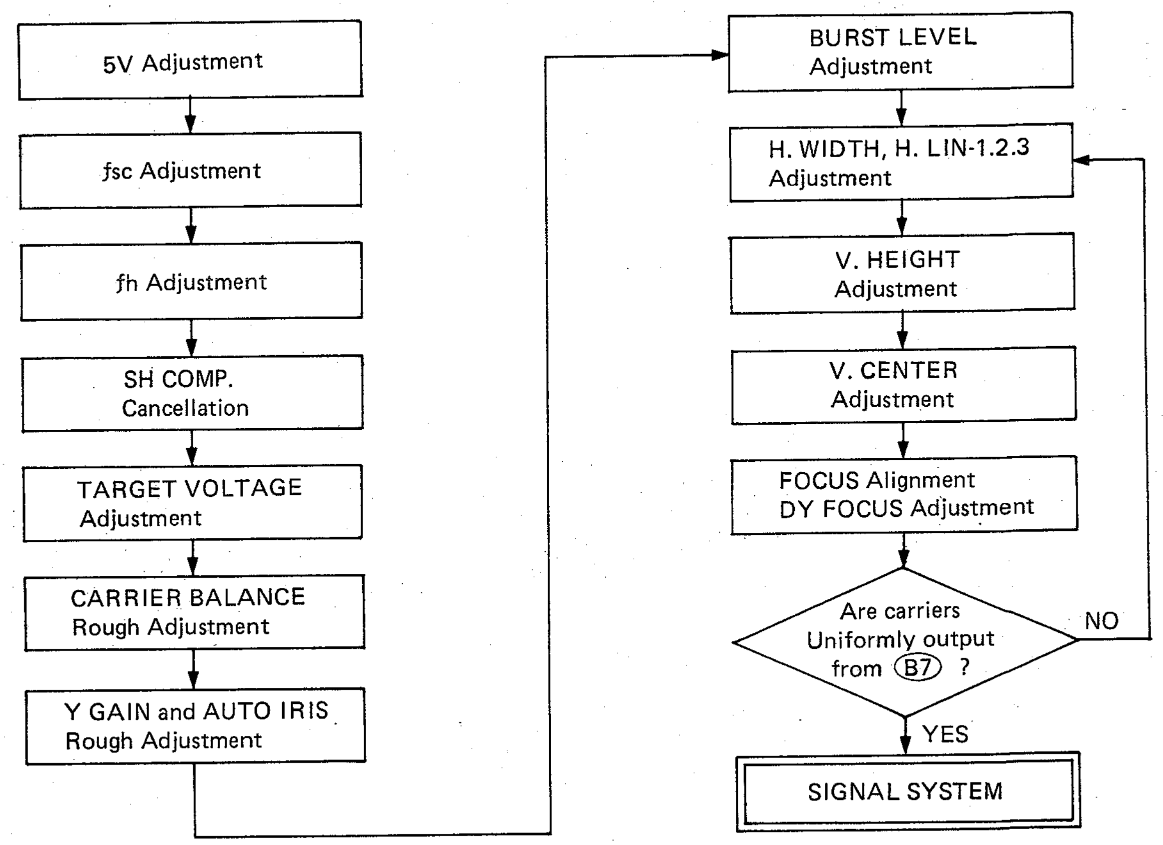

Point of contact
Point of contact
Point of contact
Full-counter-clockwise
Mechanical center
Full-clockwise
Point of contact
Point of contact
Point of contact
Full counter-clockwise
Mechanical center
Full-clockwise

ADJUSTING STEP

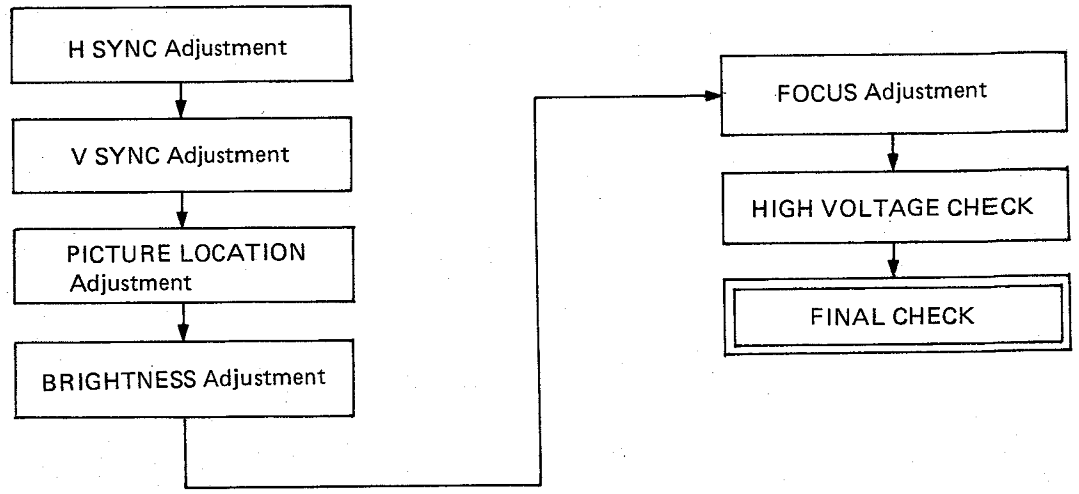
- **ADJUSTING STEP**


POWER SUPPLY and SSG system Adjustment
SIGNAL system Adjustment
ELECTRONIC VIEWFINDER Adjustment

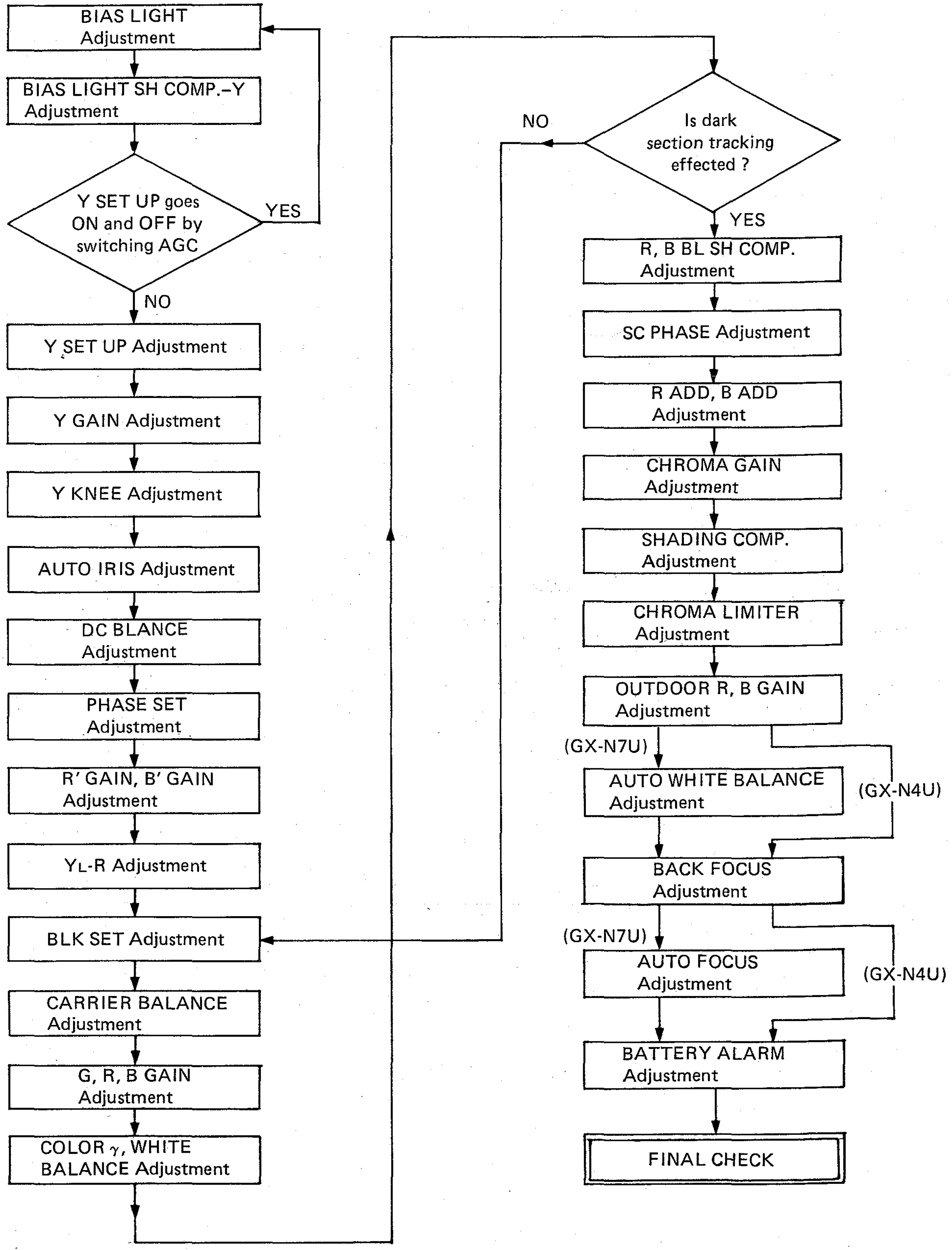
1. POWER SUPPLY and SSG system


5V Adjustment
fsc Adjustment
fh Adjustment
SH COMP. Cancellation
TARGET VOLTAGE Adjustment
CARRIER BALANCE Rough Adjustment
Y GAIN and AUTO IRIS Rough Adjustment
BURST LEVEL Adjustment
H. WIDTH, H. LIN-1.2.3 Adjustment
V. HEIGHT Adjustment
V. CENTER Adjustment
FOCUS Alignment DY FOCUS Adjustment
Are carriers Uniformly output from (B7) ?
NO
YES
SIGNAL SYSTEM

3. ELECTRONIC VIEW FINDER system

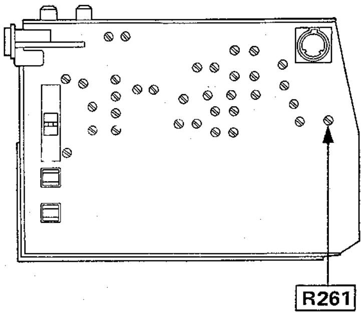
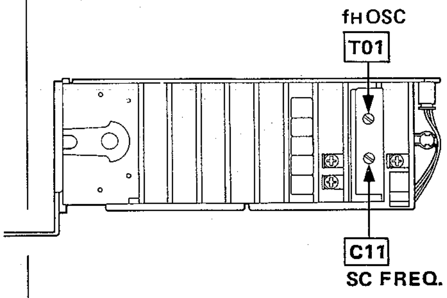

H SYNC Adjustment
V SYNC Adjustment
PICTURE LOCATION Adjustment
BRIGHTNESS Adjustment
FOCUS Adjustment
HIGH VOLTAGE CHECK
FINAL CHECK

2. SIGNAL SYSTEM

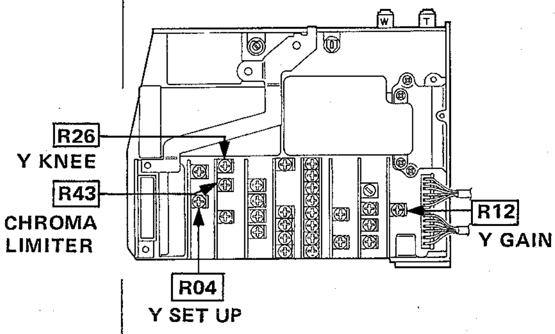
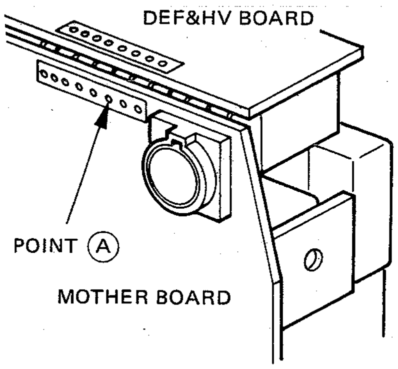

BIAS LIGHT Adjustment
BIAS LIGHT SH COMP.–Y Adjustment
Y SET UP goes ON and OFF by switching AGC
YES
NO
Y SET UP Adjustment
Y GAIN Adjustment
Y KNEE Adjustment
AUTO IRIS Adjustment
DC BLANCE Adjustment
PHASE SET Adjustment
R′ GAIN, B′ GAIN Adjustment
YL-R Adjustment
BLK SET Adjustment
CARRIER BALANCE Adjustment
G, R, B GAIN Adjustment
COLOR γ, WHITE BALANCE Adjustment
Is dark section tracking effected ?
NO
YES
R, B BL SH COMP. Adjustment
SC PHASE Adjustment
R ADD, B ADD Adjustment
CHROMA GAIN Adjustment
SHADING COMP. Adjustment
CHROMA LIMITER Adjustment
OUTDOOR R, B GAIN Adjustment
(GX-N7U)
(GX-N4U)
AUTO WHITE BALANCE Adjustment
BACK FOCUS Adjustment
(GX-N7U)
(GX-N4U)
AUTO FOCUS Adjustment
BATTERY ALARM Adjustment
FINAL CHECK

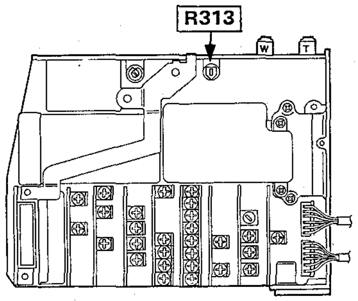
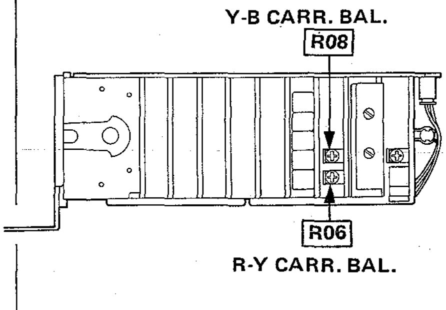
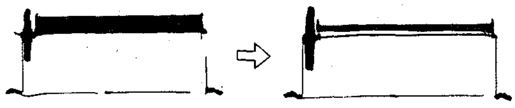
No.	Item	Measuring instrument	Test point and Adjustment part	Description

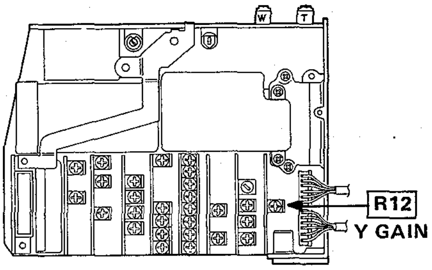
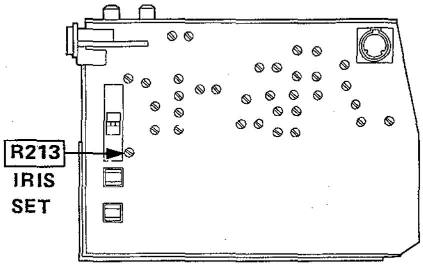
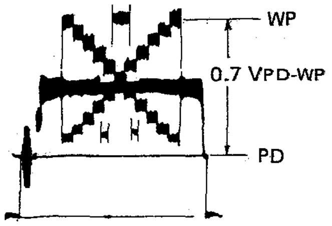
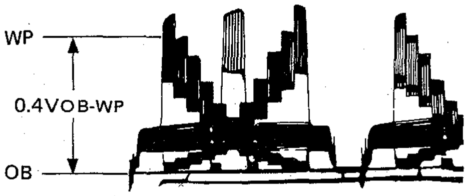
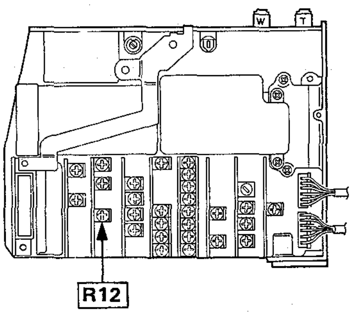
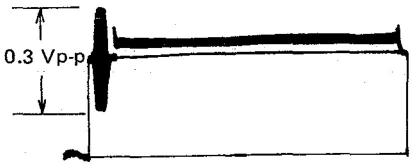
1. ADJUSTING THE POWER SUPPLY AND SSG

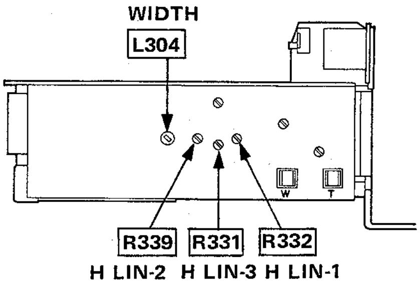
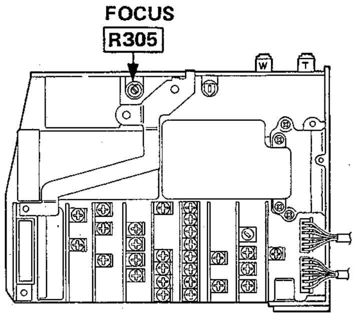
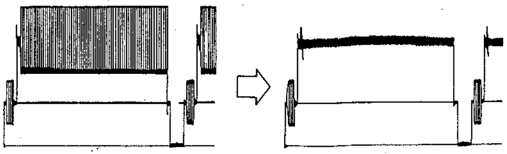
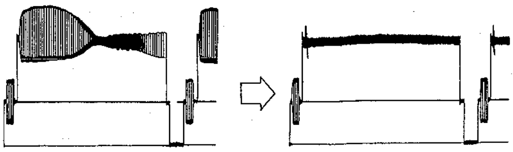
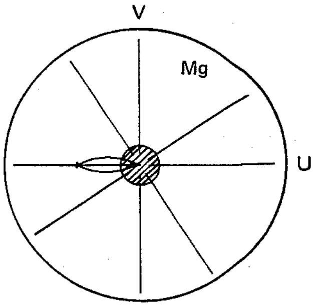
1.	5V Adjustment	DC Voltmeter	B2 (5V LINE) R261(5V ADJ.) [PRE-PRO BOARD] [MOTHER BOARD]  	Set the DC voltage to **5.0 V ± 0.1 V** scale of the meter **(Note)** The voltmeter should be precisely adjusted. Ensure that only an accurate tester is used.
2.	SSG Adjustment	This adjustment is only done when repairing the SSG IC and peripherals that require adjustment. In most cases, you can go directly to step 2. **"Adjusting the Deflection System".**		
(A)	fsc Adjustment	**Frequency counter**	K15 **C11(SC FREQ.)** [SSG BOARD] [SSG BOARD]	Turn the **C11 (SC FREQ.)** trimmer to obtain a frequency counter reading of **3.579545 MHz** ± 5 Hz. **(Note)** Take care not to short-circuit any of the IC terminals.
(B)	fh Adjustment	**DC Voltmeter**	K1 **T01 (fh OSC)** [SSG BOARD] [SSG BOARD]  	Turn the core of the **T441 (fh OSC)** to obtain a DC voltmeter reading of **2.5 V ±0.15 V.**

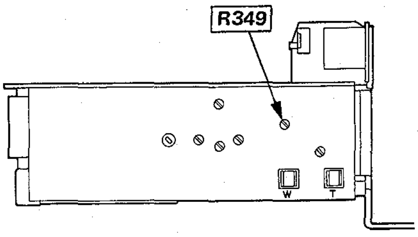
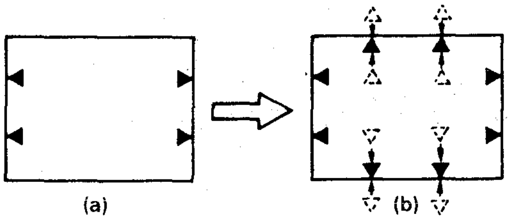
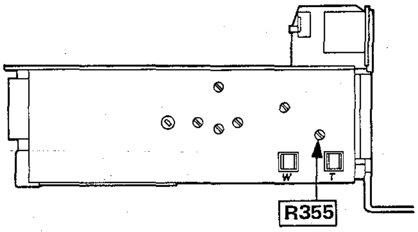
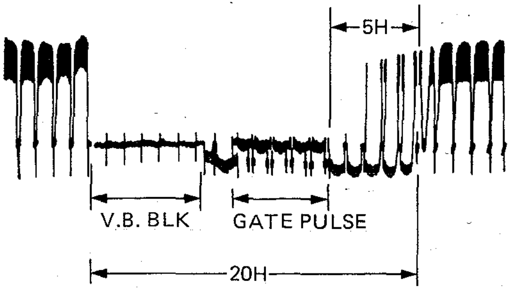
2. ADJUSTING THE DEFLECTION SYSTEM

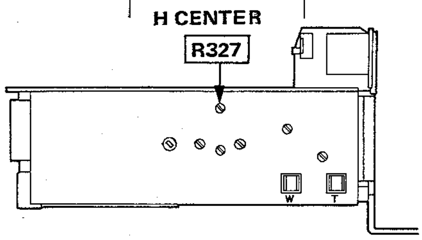
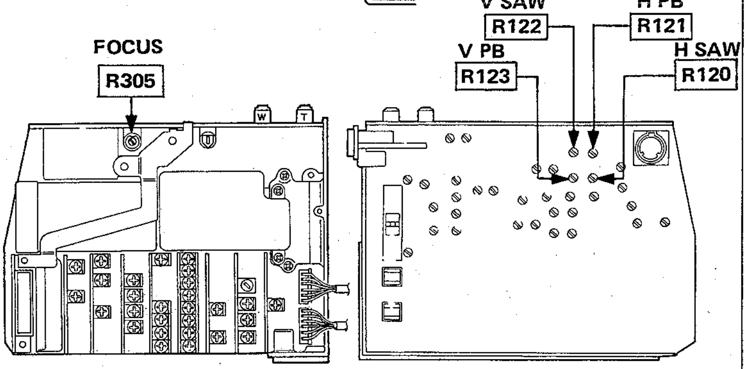
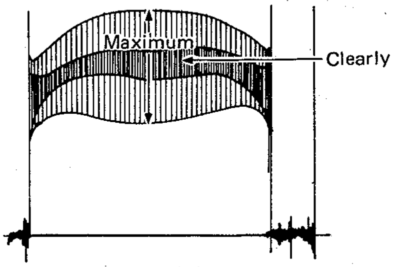
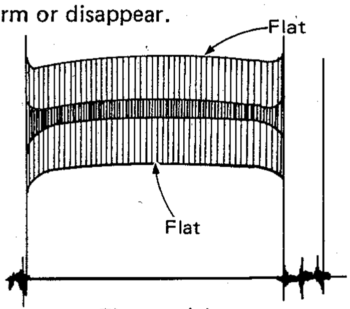
No.	Item	Measuring instrument	Test point and Adjustment part	Description
	PRESETTING			
A	**To obtain a picture**		 R26 Y KNEE R43 CHROMA LIMITER R04 Y SET UP R12 Y GAIN W T	If a picture is obtained, preset the following VRs as indicated. ● **PRE PROCESS BOARD** **R12 (Y GAIN) → Turn fully clockwise.** ● **AGC BOARD** **R26 (Y KNEE) → Turn fully clockwise.** **R43 (CHROMA LIMITER) → Turn fully counterclockwise.** ● **ENCODER BOARD** **R04 (Y SET UP) → Mechanical center.** If a picture is already obtained or fine adjustment is to be made later, presetting is not necessary.
B	**SH COMP. Cancellation**		B12 B13 [PRE PRE Board] C7 [CM Board] D10 D11 D12 D13 [DET Board] E16 E17 [B. SET Board] **POINT Ⓐ** [MOTHER Board] **H BL COMP-Y VR** **V BL COMP-Y VR** **PHASE SH COMP VR** **H BL COMP-R VR** **H BL COMP-B VR** **SH COMP-R VR** **SH COMP-B VR** **V BL COMP-B VR** **V BL COMP-R VR** **DY FOCUS VR** [MOTHER BOARD]  *As to the each VR position, refer to the item "ADJUSTMENT LOCATIONS".	Before performing deflection adjustments, preset the following VRs as indicated. 1. Measure B12 at the H-rate and adjust the **H BL COMP-Y VR** to obtain flat waveforms. 2. Measure B13 at the V-rate and adjust the **V BL COMP-Y VR** to obtain flat waveforms. 3. Measure C7 at the H-rate and adjust the **PHASE SH COMP VR** to obtain flat waveforms. 4. Measure D11 at the H-rate and adjust the **H BL COMP-R VR** to obtain flat waveforms. 5. Measure D10 at the H-rate and adjust the **H BL COMP-B VR** to obtain flat waveforms. 6. Measure D12 at the H- and V-rate, and adjust the **SH COMP-R VR** to obtain flat waveforms. 7. Measure D13 at the H- and V-rate, and adjust the **SH COMP-B VR** to obtain flat waveforms. 8. Measure E16 at the V-rate and adjust the **V BL COMP-B VR** to obtain flat waveforms. 9. Measure E17 at the V-rate and adjust the **V BL COMP-R VR** to obtain flat waveforms. 10. Measure **POINT** Ⓐ at the H- and V-rate, and adjust the **DY FOCUS VR** to obtain flat waveforms.

No.	Item	Measuring instrument	Test point and Adjustment part	Description
1.	TARGET VOLTAGE SETTING	Oscilloscope or DC Voltmeter	(B14) [PRE-PRO BOARD] R313 (TARGET) [DEF & HV BOARD] 	1. Check the voltage rating marked on the pickup tube. 2. Hook up point (B14) to an oscilloscope or a DC voltmeter. 3. Adjust **R313 (TARGET)** so that the measured voltage matches the **+7 V** rated voltage marked on the pickup tube.
2.	Rough Adjustment of the CARRIER BALANCE	Oscilloscope (H-rate 10:1)	**VIDEO OUT** **R08 (Y-B CARR. BAL.)** **R06 (R-Y CARR. BAL.)** [AGC BOARD] 	1. **Close the Iris** 2. Measure **VIDEO OUT** and alternately adjust **R08 (Y-B CARR. BAL.)** and **R06 (R-Y CARR. BAL.)** to minimize the carrier.  **Fig. 2-2**

No.	Item	Measuring instrument	Test point and Adjustment part	Descripton
3.	Rough Adjustment of the Y GAIN and AUTO IRIS	Oscilloscope (H-rate 10:1) Gray scale pattern	(B8) [PRE-PRO BOARD] **R12 (Y GAIN)** [PRE-PRO BOARD] **R213 (IRIS SET)** [MOTHER BOARD]   	○ **Set the IRIS SWITCH to AUTO** 1. Measure **VIDEO OUT**, and as shown in **Fig. 2-3 (a)**, adjust **R215 (IRIS SET)** so that the waveforms become **0.7VPD-WP** (pedestal-white peak)  **Fig. 2-3 (a)** 2. Measure (B8), and as shown in **Fig. 2-3 (b)**, adjust **R12 (Y GAIN)** so that the waveforms become **0.4VOB-WP** (optical black-white peak)  **Fig. 2-3 (b)**
4.	BURST LEVEL Adjustment	Oscilloscope (H-rate 10:1)	VIDEO OUT **R12 (BURST LEVEL)** [AGC BOARD]  	1. Adjust **R12 (BURST LEVEL)**, so that the burst level is **0.3Vp-p** as shown in **Fig. 2-4.**  **Fig. 2-4**

No.	Item	Measuring instrument	Test point and Adjustment part	Description
5.	H. WIDTH H. LIN	Oscilloscope (H-rate 10:1) White pattern	VIDEO OUT L304 (WIDTH) R332 (H LIN-1) R339 (H LIN-2) R331 (H LIN-3) R305 (FOCUS) [DEF & HV BOARD]  WIDTH L304 W T R339 R331 R332 H LIN-2 H LIN-3 H LIN-1 	**Adjusting procedure with oscilloscope.** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. As shown in **Fig. 2-5 (a)**, adjust **R305 (FOCUS)** so that the carrier is minimized.  Fig. 2-5 (a) 2. As shown in **Fig. 2-5 (b)**, adjust **L304 (WIDTH)**, **R332 (H LIN-1)**, **R339 (H LIN-2)**, and **R331 (H LIN-3)** so that the carrier is minimized and becomes flat.  Fig. 2-5 (b) 3. Repeat above steps 1 and 2 until optimum conditions are obtained. **(Note)** This adjustment is effective only when adjustment of 4.1 MHz trap is correct.
		Vectorscope White pattern	VIDEO OUT	**Adjusting procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO.** 1. As shown in **Fig. 2-5 (c)**, alternately adjust **R305 (FOCUS)**, **L304 (WIDTH)**, **R332 (H LIN-1)**, **R339 (H LIN-2)**, and **R331 (H LIN-3)** to achieve convergence at one point in the **MG** direction.  Fig. 2-5 (c)

No.	Item	Measuring instrument	Test point and Adjustment part	Description
6.	**V. HEIGHT Adjustment**	Monitor TV (underscan type) **Gray scale pattern (GS-2A)**	**VIDEO OUT** **R349 (V HEIGHT)** [DEF & HV BOARD] 	○ If an overscanning-type monitor TV is used, mark the screen in the ratio 3:4. 1. Slide the camera back and forth or perform zooming until the horizontal frame marks concide with the side limits of the monitor screen, as shown in **Fig. 2-6 (a).** 2. Adjust **R349 (V. HEIGHT)** until the vertical frame marks concide with the upper and lower limits of the monitor screen, as shown in **Fig. 2-6 (b).**  **Fig. 2-6**
7.	**V.CENTER**	*Oscilloscope* (V-rate 1 : 1) White pattern	(B8) [PRE-PRO BOARD] **R355 (V CENTER)** [DEF & HV BOARD] 	○ Set the IRIS CONTROL SWITCH to AUTO 1. Shoot the white pattern on the full screen surface and adjust so that the pattern edges do not appear on the screen. 2. Measure (B8) at the V-rate, and as shown in **Fig. 2-7,** adjust **R355 (V. CENTER)** so that image start falls within **5H** section from the gate pulse.  **Fig. 2-7**

No.	Item	Measuring instrument	Test point and Adjustment part	Description
8.	**SHADING & H CENTER Adjustment**	**Oscilloscope** (H-rate 10:1) **White pattern**	(B7) [PRE-PRO BOARD] **Alignment magnet** **R305 (FOCUS)** **R327 (H CENTER)** [DEF & HV BOARD] **DY FOCUS VRs** **R120 (H SAW)** **R121 (H PB)** **R122 (V SAW)** **R123 (V PB)** [MOTHER BOARD]  H CENTER R327 W T  FOCUS R305 W T V SAW R122 H PB R121 V PB R123 H SAW R120	○ **Shoot the white pattern and set the Iris to obtain 0.4 V OB-WP at (B8).** (**On the GX-N4U, adjust R213 (IRIS SET) to obtain 0.4 V OB-WP.**) 1. As shown in **Fig. 2-7 (a),** demount the switching regulator by removing the screw Ⓐ . **(Note)** Leave the connector attached. 2. Measure (B7), and as shown in **Fig. 2-7 (b),** adjust the **alignment magnet** and **R305 (FOCUS)** so that the carrier is maximum and the phase lines are clearly observable.  Fig. 2-8 (b) 3. As shown in **Fig. 2-7 (c),** adjust **R120 (H SAW), R121 (H PB), R122 (V SAW),** and **R123 (V PB)** so that the waveforms become uniform or disappear.  Fig. 2-8 (c) 4. Adjust **R327 (H CENTER)** so that right-side/left-side balance of the carrier shown in **Fig. 2-8 (c)** is equalized. 5. Repeat above steps 2 and 3 until shading is minimized. Also, if necessary, repeat **"2-4. H WIDTH/H LIN Adjustment."**

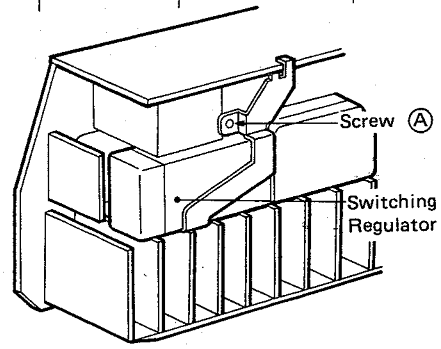

Screw Ⓐ
Switching Regulator

Fig. 2-8 (a)

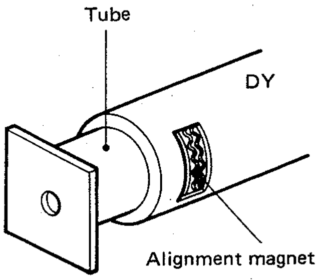
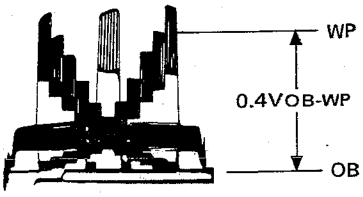
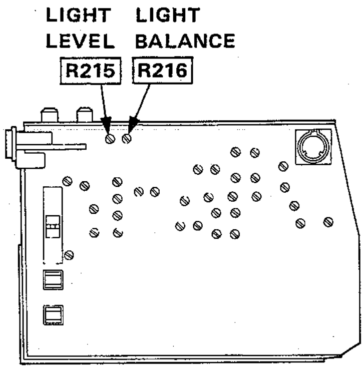
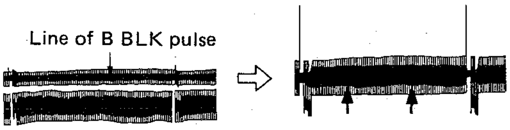
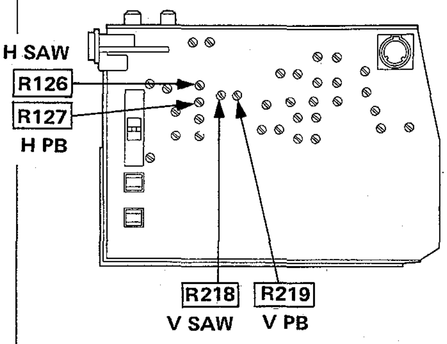
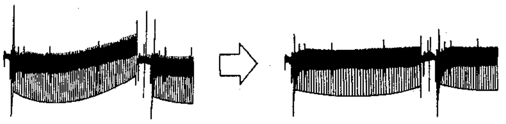
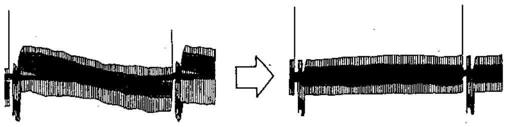
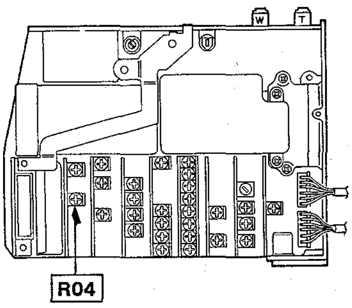
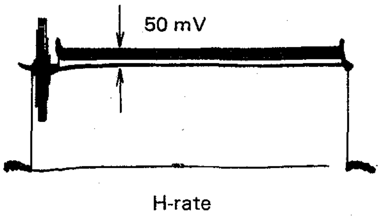

Tube
DY
Alignment magnet

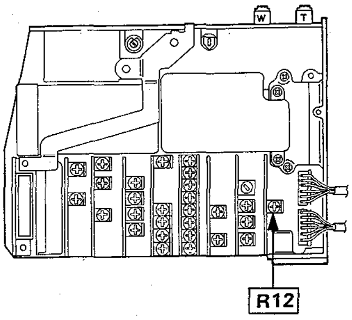
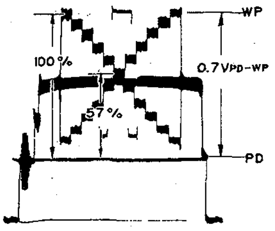
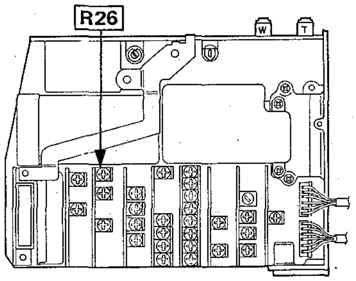
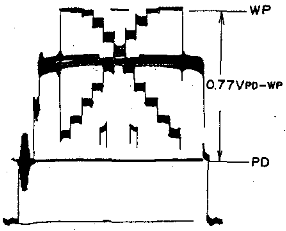
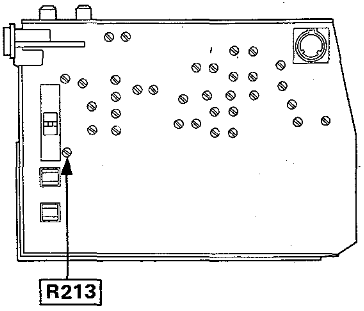
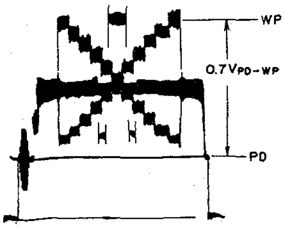
Fig. 2-8 (d)

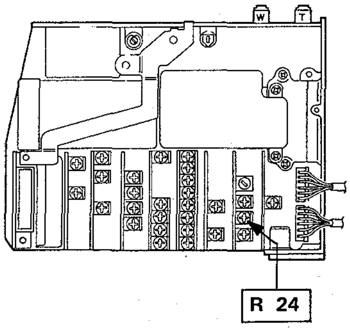
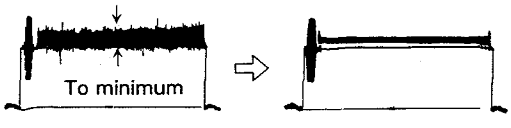
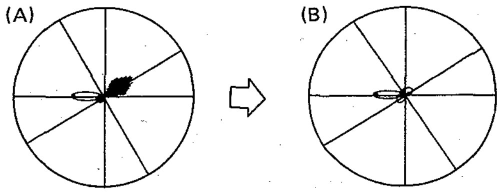
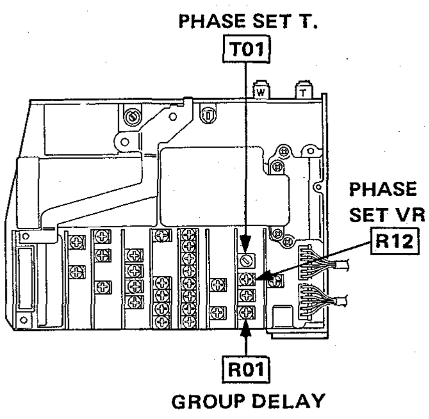
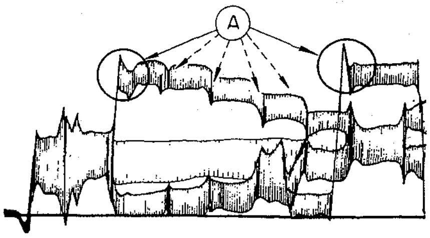
3. ADJUSTING THE SIGNAL SYSTEM

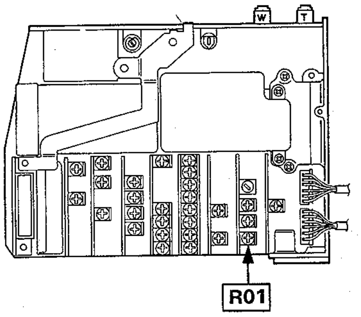
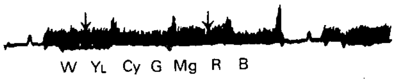
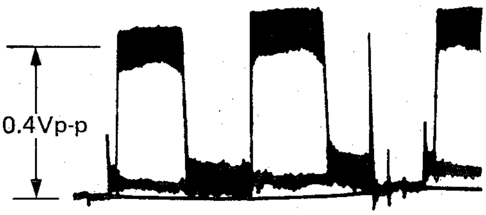
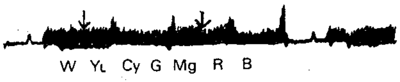
* Certain adjustments in this section require the iris setting to be checked. Be especially careful if the position or direction of the lights have been changed.
Some procedures require a black lens cap.

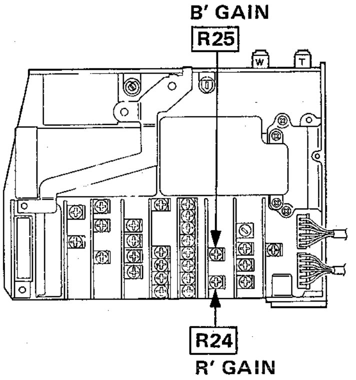
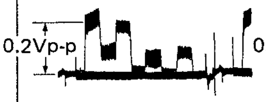
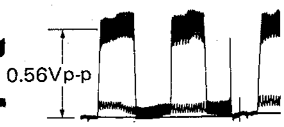
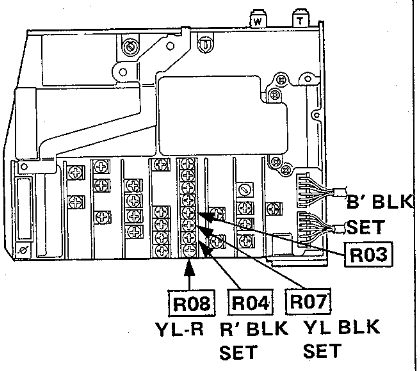
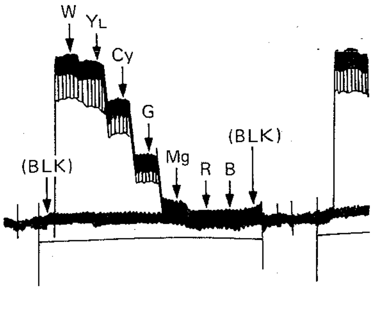
No.	Item	Measuring instrument	Test point and Adjustment part	Description
1.	**STANDARD SETTING OF THE IRIS**	**Oscilloscope** (H-rate 10:1) **Gray scale pattern**	(B8) [PRE-PRO BOARD] **Illumination lamp** **IRIS**	1. Adjust the position and angle of the lamp so that the lighting becomes uniform all over the gray scale pattern. 2. Adjust the Iris so that a waveform of **0.4V** (optical black-white peak) is obtained on the oscilloscope, as shown in **Fig. 3-1.** (GX-N7U/UT only)  **Fig. 3-1**
2.	**BIAS LIGHT Adjustment**	**Oscilloscope** (V-rate 1:1)	(B8) **R215 (LIGHT LEVEL)** [PRE-PRO BOARD] **R216 (LIGHT BALANCE)** **[MOTHER BOARD]** 	○ **Close the Iris by lens cap** 1. Measure (B8) at the V-rate, and as shown in **Fig. 3-2**, adjust **R215 (LIGHT LEVEL)** so that the carrier center during the image period is aligned with the B BLK pulse line.  **Fig. 3-2** 2. When the carrier is tilted, adjust **R216 (LIGHT BALANCE).** 3. Conduct ON ↔ OFF switching of the AGC SW., and confirm that the carrier does not move.

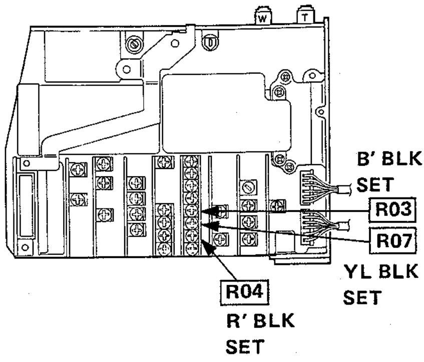
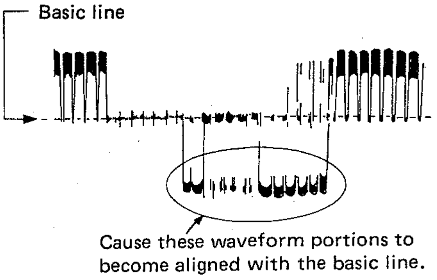
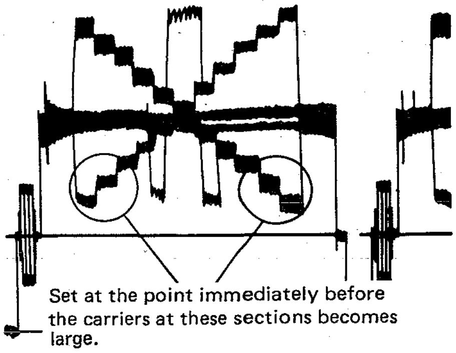
No.	Item	Measuring instrument	Test point and Adjustment part	Description
3.	BL SH COMP.-Y. Adjustment	Oscilloscope (H-rate V-rate 1:1)	(B8) [PRE-PRO BOARD] H BL COMP.-Y VR R127 (H PB) R126 (H SAW) V BL COMP.-Y VR R219 (V PB) R218 (V SAW) [MOTHER BOARD]  H SAW R126 R127 H PB R218 V SAW R219 V PB	○ **Close the Iris by lens cap** 1. Measure (B8) at H-rate, and as shown in **Fig. 3-3 (a)**, adjust **R127 (H PB)** and **R126 (H SAW)** so that the carrier becomes flat.  **Fig. 3-3 (a)** 2. Measure (B8) at V-rate, and as shown in **Fig. 3-3 (b)**, adjust **R219 (V PB)** and **R218 (V SAW)** so that the carrier becomes flat.  **Fig. 3-3 (b)** 3. Measure the **VIDEO OUT**, and confirm that AUTO ⟷ MANUAL switching of the IRIS SW. (or AGC SWITCH ON/OFF) causes no Y SET UP level variation. If varied, repeat **"3-2. BIAS LIGHT Adjustment."**
4.	Y SET UP Adjustment	Oscilloscope (H-rate 10:1)	VIDEO OUT R04 (Y SET UP) [ENC BOARD] 	○ **Close the Iris (AGC OFF)** 1. As shown in **Fig. 3-4**, adjust **R04 (Y SET UP)** so that the set-up level becomes **50 mV.**  **Fig. 3-4**

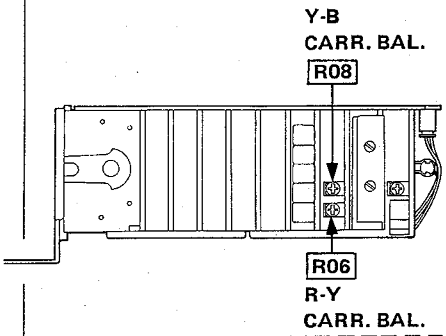
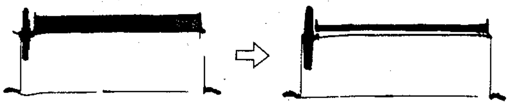
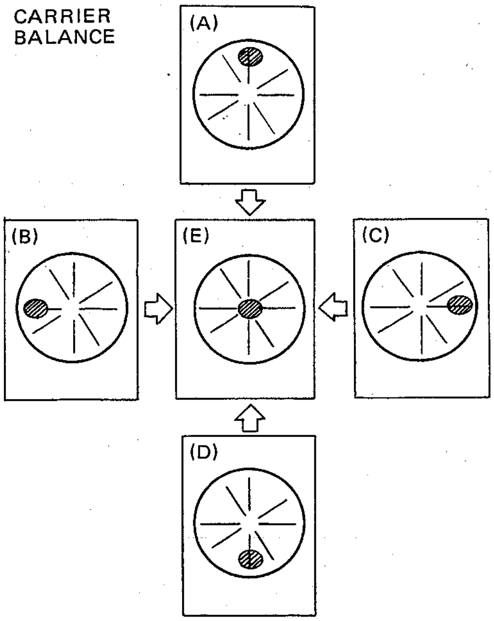
No.	Item	Measuring instrument	Test point and Adjustment part	Description
5.	Y GAIN Adjustment (GX-N7U/UT only)	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R12 (Y GAIN) [PRE-PRO BOARD] 	○ Shoot the gray scale pattern and set the Iris to obtain 0.4VOB-WP at (B8). (On the GX-N4U, refer to "2-5 Rough Adjustment of the Y GAIN.") 1. Adjust R11 (Y GAIN) so that the waveform at VIDEO OUT becomes 0.7 VPD-WP.  Fig. 3-5 (Note) The crossing point lies at approx. 57%
6.	Y KNEE Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R26 (Y KNEE) [AGC BOARD] 	○ Set the Iris for a value of 0.9 V ~ 1 VPD-WP at VIDEO OUT. (On the GX-N4U, adjust R213 (IRIS SET) to obtain 0.9VPD-WP.) 1. Adjust R26 (Y KNEE) so that the waveform peak are compressed to 0.77VPD-WP.  Fig. 3-6
7.	AUTO IRIS Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R213 (IRIS SET) [MOTHER BOARD] 	○ Set the IRIS SET SWITCH to AUTO. 1. Adjust R213 (IRIS SET) so that the waveform becomes 0.7VPD-WP (± 0.021V).  Fig. 3-7

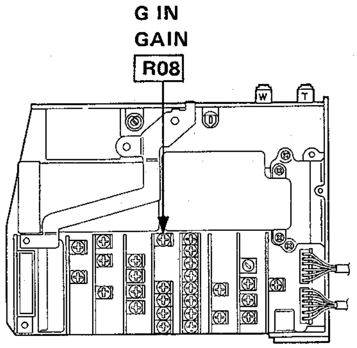
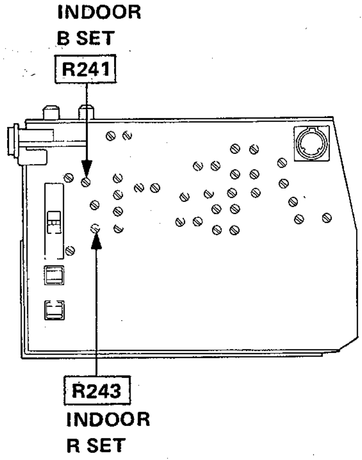
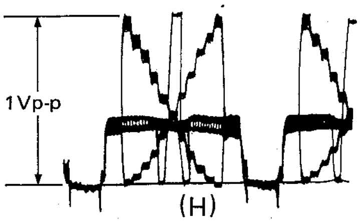
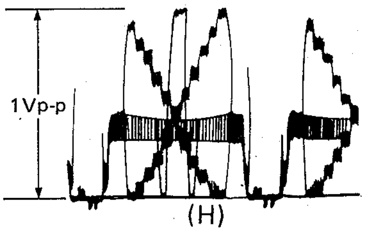
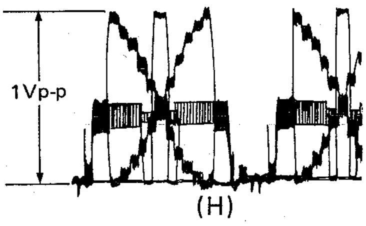
No.	Item	Measuring instrument	Test point and Adjustment part	Description
8.	DC BALANCE Adjustment	Oscilloscope (H-rate 10:1)	VIDEO OUT R24 (DC SET) [C. M. BOARD] 	**Adjustment procedure with oscilloscope** 1. Close the iris. 2. Adjust **R24 (DC SET)** to minimize the noise component of the waveform.  **Fig. 3-8 (a)**
		Vectorscope	VIDEO OUT	**Adjustment procedure with vectorscope** 1. Close the iris. 2. Adjust **R24 (DC SET)** to minimize the blue portion of the carrier on the vectorscope.  **Fig. 3-8 (b)**
9. (A)	PHASE SET Adjustment PHASE SET	Oscilloscope (H-rate 10:1) Gray scale pattern	(D8) (TP-B') [B SET BOARD] R01 (GROUP DELAY) R12 (PHASE SET VR) T01 (PHASE SET T.) [C.M. BOARD]  PHASE SET T. T01 W T PHASE SET VR R12 R01 GROUP DELAY	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Shoot the gray scale pattern and set **R01 (GROUP DELAY)** fully in the direction that causes the monitor image to become darkest blue. 2. Set **R12 (PHASE SET VR)** to the mechanical center. 3. Measure (D8) and adjust **T01 (PHASE SET T)** so that the overshoot shown in **Fig. 3-9 (a)** is minimized.  **Fig. 3-9 (a)**

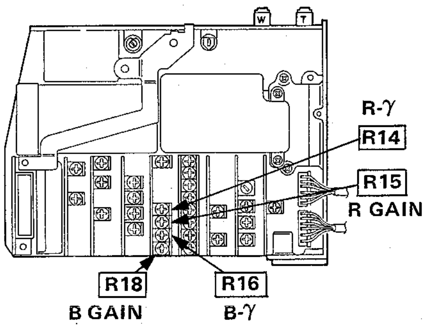
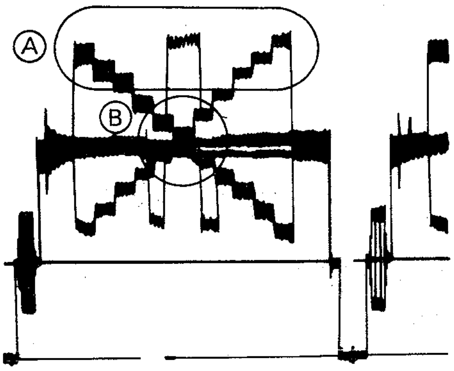
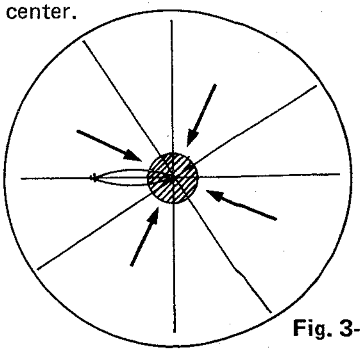
No.	Item	Measuring instrument	Test point and Adjustment part	Descripton
(B)	GROUP DELAY (GX-N7U/UT)	Color bar pattern	(D8) (TP-B') R01 (GROUP DELAY) [B SET BOARD] [C.M. BOARD] 	○ **Shoot the color bar pattern and adjust the iris so that 0.7VPD-WP is obtained.** 1. Mount the **red filter (R60-46S)** on the lens, and as shown in **Fig. 3-9 (b)**, adjust **R01 (GROUP DELAY)** so that the carrier is minimized. Adjust for minimum carrier concentrated wear base line  **Fig. 3-9 (b)**
(B)	GROUP DELAY (GX-N4U/UT)	Color bar pattern	(D8) (TP-B') R01 (GROUP DELAY) [C.M. BOARD] (D9) (TP-R') [B SET BOARD]	1. Mount the **red filter (R60-46S)** on the lens. 2. Measure (D9), and as shown in **Fig. 3-9 (d)**, adjust **R213 (IRIS SET)** so that the waveform level becomes **0.4Vp-p.**  **Fig. 3-9 (c)** 3. Measure (D8), and as shown in **Fig. 3-9 (e)**, adjust **R01 (GROUP DELAY)** so that the carrier is minimized. 4. After adjustment is completed, readjust AUTO IRIS by referring to **"3-7 AUTO IRIS Adjustment."** Adjust for minimum carrier concentrated wear base line  **Fig. 3-9 (d)**

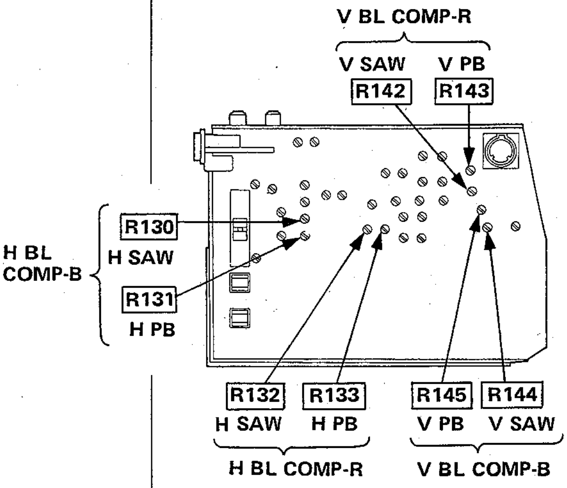
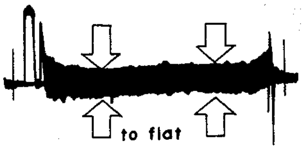
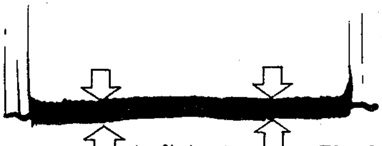
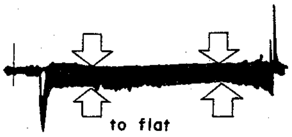
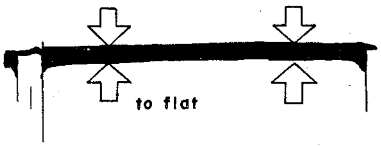
No.	Item	Measuring instrument	Test point and Adjustment part	Description
10.	R' GAIN B' GAIN Adjustment	Oscilloscope (H-rate 10:1) Color bar pattern	(D8) (TP-B') (D9) (TP-R') [DET BOARD] R25 (B'GAIN) R24 (R' GAIN) [DET BOARD] 	○ **Set the IRIS CONTROL SWITCH to AUTO and confirm that the white portion of color bar pattern is 0.7VPD-WP under VIDEO OUT.** 1. Measure (D9), and as shown in **Fig. 3-10 (a)**, adjust **R25 (B' GAIN)** so that white portions become **0.2Vp-p.** 2. Measure (D8), and as shown in **Fig. 3-10 (b)**, adjust **R24 (R' GAIN)** so that white portions become **0.56Vp-p.**  **Fig. 3-10 (a)**  **Fig. 3-10 (b)**
11.	YL-R Adjustment	Oscilloscope (H-rate 10:1) Color bar pattern	(F12) (TP-R) (F13) (TP-B) (F14) (TP-G) [GAMMA BOARD] R07 (YL BLK SET) R03 (B' BLK SET) R04 (R' BLK SET) R08 (YL-R) [B SET BOARD]  W T B' BLK SET R03 R08 YL-R R04 R' BLK SET R07 YL BLK SET	○ **Set the IRIS CONTROL SWITCH to AUTO and confirm that the white portion of color bar pattern is 0.7VPD-WP under VIDEO OUT.** 1. Measure (F12), and set **R04 (R' BLK SET)** fully in the direction where no carrier collapsing develops. 2. Measure (F13), and set **R03 (B'BLK SET)** fully in the direction where no carrier collapsing develops. 3. Measure (F14) and set **R07 (YL BLK SET)** at the point where no carrier collapsing develops. 4. Measure (F14) as such, and as shown in **Fig. 3-11**, adjust **R08 (YL-R)** so that **red (R), blue (B),** and **black (BLK)** levels of the color bar pattern become equal.  **Fig. 3-11**

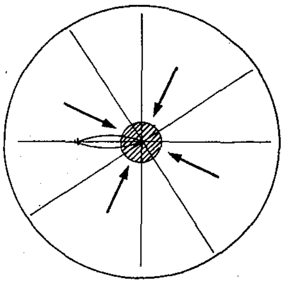
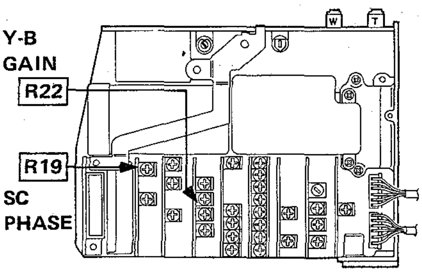
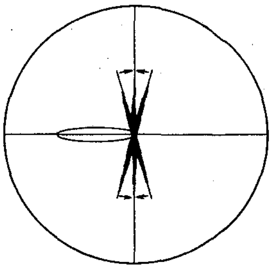
No.	Item	Measuring instrument	Test point and Adjustment part	Description
12.	BLK SET Adjustment	Oscilloscope (H-rate V-rate 10:1) Gray scale pattern	(F12) (TP-R) R07 (YL BLK SET) (F13) (TP-B) R03 (B' BLK SET) (F14) (TP-G) R04 (R' BLK SET) [B SET BOARD] [GAMMA BOARD] **VIDEO OUT**  W T B' BLK SET R03 R07 YL BLK SET R04 R' BLK SET	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Observe (F14) under the "V" rate, and adjust **R07 (YL BLK SET)** so that the protruding waveform portions shown in **Fig. 3-12(a)** are aligned with the **basic line.**  **Fig. 3-12 (a)** **(Note)** While exercising care not to excessively rotate the VR, stop adjusting immediately when alignment with the basic line is achieved. 2. Measure **VIDEO OUT** at the H-rate, and adjust **R03 (B' BLK SET)** and **R04 (R' BLK SET)** to obtain setting at the point immediately before the carriers at the lower step section shown in **Fig. 3-12(b)** respectively become large.  **Fig. 3-12 (b)** 3. Observe (F12), (F13), and (F14) under the "H" rate, and confirm that the dark waveform portions are not excessibely flattened out. **(Note)** An ideal status is achieved when the lowest gray-scale edge contacts the basic line.

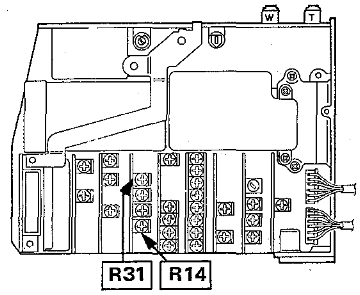
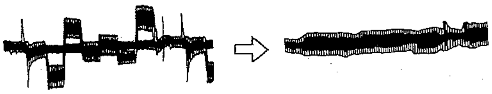
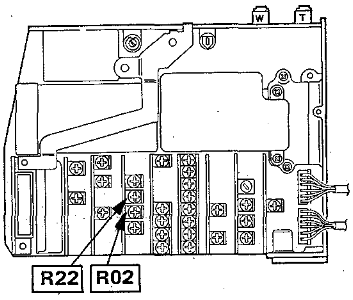
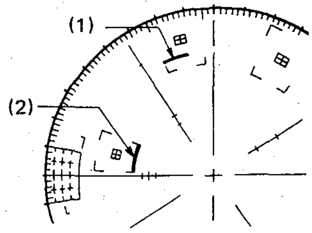
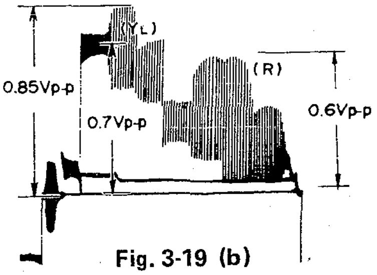
No.	Item	Measuring instrument	Test point and Adjustment part	Description
13.	CARRIER BALANCE Adjustment	Oscilloscope (H-rate 10:1)	VIDEO OUT R08 (Y-B CARR. BAL.) R06 (R-Y CARR. BAL.) [ENC BOARD] 	**Adjustment procedure with oscilloscope** ○ **Close the iris (AGC OFF)** 1. Measure **VIDEO OUT** and alternately adjust **R06 (R-Y CARR. BAL.)** and **R08 (Y-B CARR. BAL.)** to minimize the carrier.  **Fig. 3-13(a)**
		Vectorscope	VIDEO OUT	**Adjustment procedure with vectorscope** ○ **Close the iris (AGC OFF)** 1. Adjust **R06 (R-Y CARR. BAL.)** and **R08 (Y-B CARR. BAL.)** so that the carrier comes to the center of the vectorscope.  **Fig. 3-13 (b)**

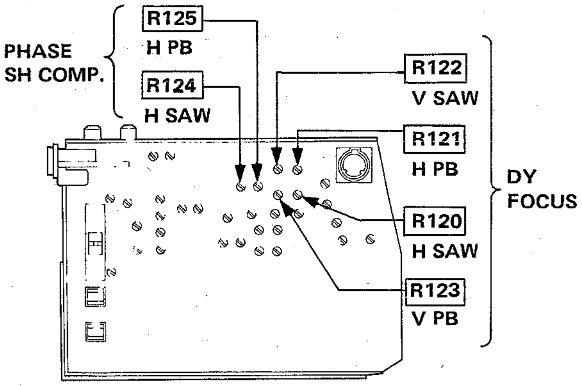
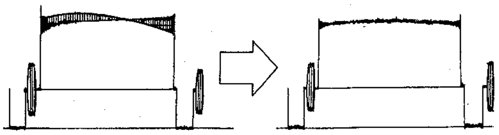
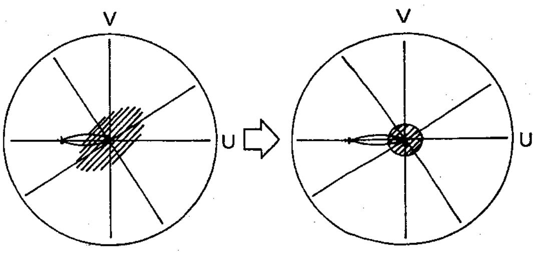
No.	Item	Measuring instrument	Test point and Adjustment part	Description
14.	R, G, B GAIN Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	F12 (TP-R) F13 (TP-B) F14 (TP-G) [GAMMA BOARD] R08 (G IN GAIN) [GAMMA BOARD] R241 (INDOOR B SET) R243 (INDOOR R SET) [MOTHER BOARD]  	○ **Set the IRIS CNTROL SWITCH to AUTO** 1. Measure F14 and adjust **R08 (G IN GAIN)** so that the portion shown in **Fig. 3-14 (a)** becomes **1Vp-p.**  **Fig. 3-14 (a)** 2. Measure F12 and adjust **R243 (INDOOR R SET)** so that the portion shown in **Fig. 3-14 (b)** becomes **1Vp-p.**  **Fig. 3-14 (b)** 3. Measure F13 and adjust **R241 (INDOOR B SET)** so that the portion shown in **Fig. 3-14 (c)** becomes **1Vp-p.**  **Fig. 3-14 (c)** **(Note)** The AUTO WHITE SWITCH must be set at the **"INDOOR"** position.

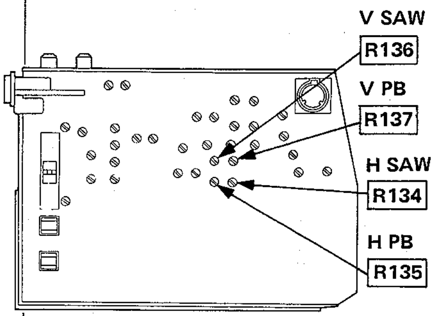
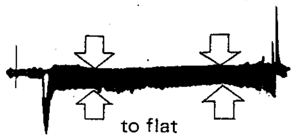
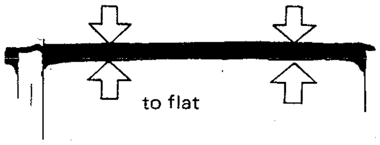
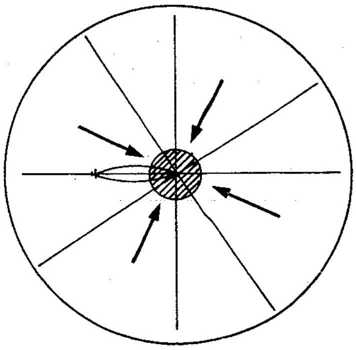
No.	Item	Measuring instrument	Test point and Adjustment part	Description
15.	COLOR γ WHITE BALANCE Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R15 (R GAIN) R18 (B GAIN) R14 (R-γ) R16 (B-γ) [GAMMA BOARD]  W T R-γ R14 R15 R GAIN R18 B GAIN R16 B-γ	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure the **VIDEO OUT**, and adjust **R15 (R GAIN)** and **R18 (B GAIN)** so that the carrier at section Ⓐ shown in **Fig. 3-15 (a)** is minimized.  **Fig. 3-15 (a)** 2. Adjust **R14 (R-γ)** and **R16 (B-γ)** so that the carrier at section Ⓑ shown in **Fig. 3-15** is minimized. 3. When carriers remain in the dark sections of waveforms, repeat **"3-12 BLK SET Adjustment."**
		Vectorscope Gray scale pattern	VIDEO OUT	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. As shown **Fig. 3-15 (b)**, adjust **R15 (R GAIN)**, **R18 (B GAIN)**, **R14 (R-γ)**, and **R16 (B-γ)** so that the carriers converge at the center.  **Fig. 3-15 (b)** 2. Concurrently observe the oscilloscope, and when carriers are found to be remaining in the dark sections of waveforms, repeat **"3-12 BLK SET Adjustment."**

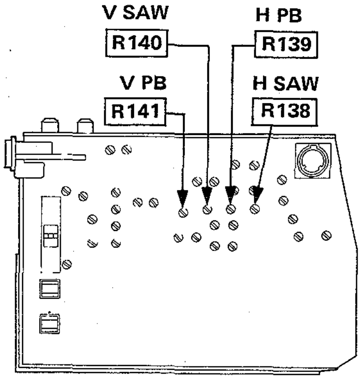
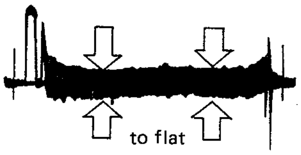
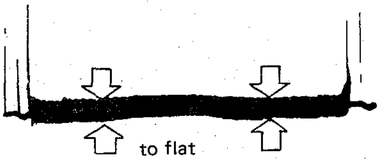
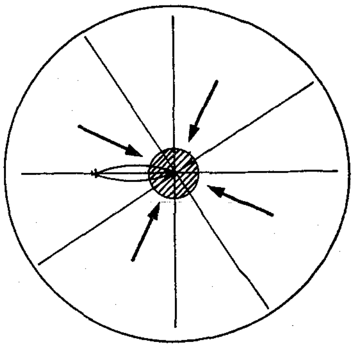
No.	Item	Measuring instrument	Test point and Adjustment part	Description
16.	R, B BL SH COMP. Adjustment	Oscilloscope (H-rate V-rate 10:1)	J6 (Y-B) J7 (R-Y) [AGC BOARD] H BL COMP-B VR R131 (H PB) R130 (H SAW) H BL COMP-R VR R133 (H PB) R132 (H SAW) V BL COMP-R VR R143 (V PB) R142 (V SAW) V BL COMP-B VR R145 (V PB) R144 (V SAW) [MOTHER BOARD]  V BL COMP-R V SAW V PB R142 R143 H BL COMP-B R130 H SAW R131 H PB R132 H SAW R133 H PB R145 V PB R144 V SAW H BL COMP-R V BL COMP-B	**Adjustment procedure with oscilloscope** ○ **Attach the lens cap and set the IRIS CONTROL SWITCH to AUTO.** 1. Measure J6 at H-rate, and adjust **R131 (H PB)** and **R130 (H SAW)** so that the waveforms become flat.  **Fig. 3-16 (a)** 2. Measure J6 at V-rate, and adjust **R145 (V PB)**, and **R144 (V SAW)** so that the waveforms become flat.  **Fig. 3-16 (b)** 3. Measure J7 at H-rate, and adjust **R133 (H PB)** and **R132 (H SAW)** so that the waveforms become flat.  **Fig. 3-16 (c)** 4. Measure J7 at V-rate, and adjust **R145 (H PB)** and **R144 (V SAW)** so that the waveforms become flat.  **Fig. 3-16 (d)**

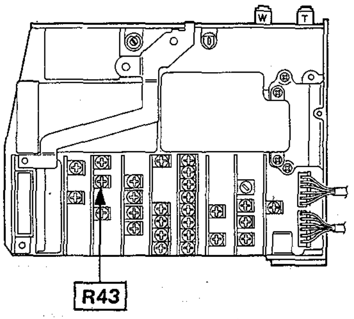
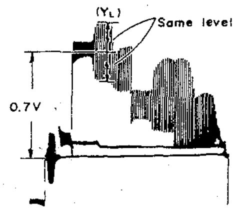
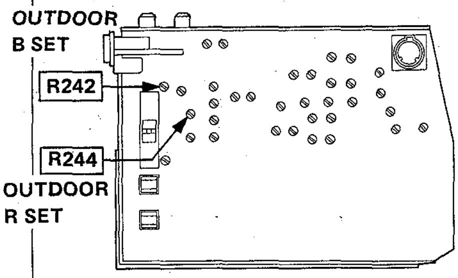
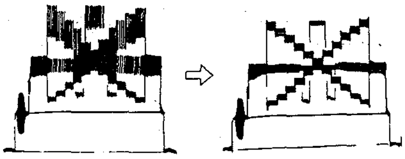
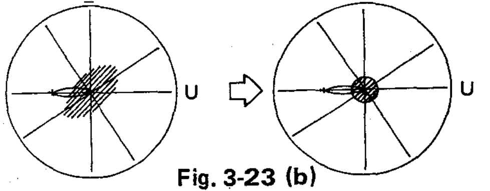
No.	Item	Measuring instrument	Test point and Adjustment part	Description
		Vectorscope	**VIDEO OUT**	**Adjustment procedure with vectorscope** ○ **Attach the lens cap and set the IRIS CONTROL SWITCH to AUTO.** 1. Adjust the **H BL COMP.-R VR, H BL COMP.-B VR, V BL COMP.-R VR,** and **V BL COMP.-B VR** so that the carriers converge at the vectorscope center as shown in **Fig. 3-16(d).**  **Fig. 3-16 (d)**
17.	**SC PHASE Adjustment**	**Vectorscope** **Color bar pattern**	**VIDEO OUT** **R22 (Y-B GAIN)** [CDP BOARD] **R19 (SC PHASE)** [ENC BOARD]  	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure the vectorscope, and adjust **R22 (Y-B GAIN)** so that the (Y-B)-side output becomes "0" as shown in **Fig. 3-17.** 2. Adjust **R19 (SC PHASE)** so that the (R-Y)-side carriers coincide with the R-Y axis as shown in **Fig. 3-17.**  **Fig. 3-17** **(Note)** When a vectorscope is not available, observe the **monitor TV** by shooting the color bar pattern, and adjust **R19 (SC PHASE)** so that an optimum color balance is obtained. 3. After adjustment is completed, return **R22 (Y-B GAIN)** to an appropriate setting position.

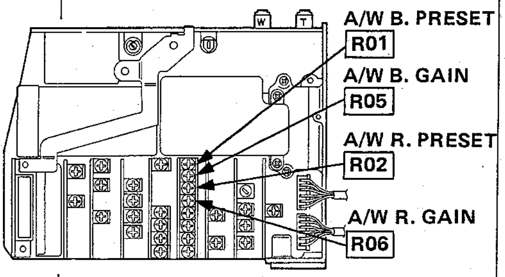
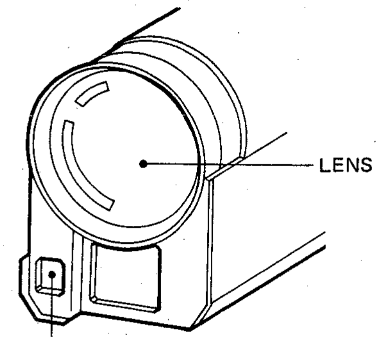
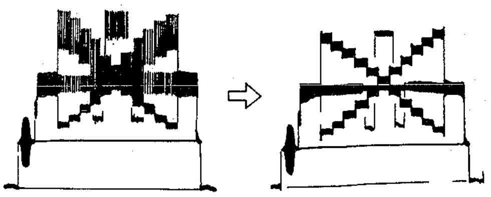
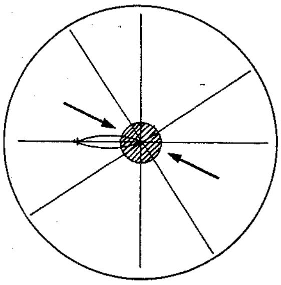
No.	Item	Measuring instrument	Test point and Adjustment part	Description
18.	R ADD, B ADD Adjustment	Oscilloscope (H-rate 10:1) Color bar pattern	G15 G16 [CDP BOARD] R14 (R ADD LEVEL) R31 (B ADD LEVEL) [CDP BOARD]  B ADD LEVEL R ADD LEVEL	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure G15 and adjust **R14 (R ADD LEVEL)** so that the carrier becomes flat. 2. Measure G16 and adjust **R31 (B ADD LEVEL)** so that the carrier becomes flat.  **Fig. 3-18**
19.	CHROMA GAIN Adjustment	Vectorscope Color bar pattern (CC-2T)	VIDEO OUT R22 (Y-B GAIN) R02 (R-Y GAIN) [CDP BOARD]  Y-B GAIN R-Y GAIN	○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Adjust **R02 (R-Y GAIN)** so that the red level is positioned at **(1)**, shown in **Fig. 3-19 (a)**. Also adjust **R22 (Y-B GAIN)** so that the yellow level is positioned at **(2)**, in the same **Fig. 3-19 (a)**.  **Fig. 3-19 (a)** **(Note)** When a vectorscope is not available, conduct adjustment by the following method.
		Oscilloscope Color bar pattern (CC-2T)	VIDEO OUT	1. Measure the VIDEO OUT, and adjust **R22 (Y-B GAIN)** so that the **yellow section (YL)** shown in **Fig. 3-19 (b)** becomes **0.85V.** 2. Next, adjust **R02 (R-Y GAIN)** so that the **red section (R)** becomes **0.6V.**  **Fig. 3-19 (b)** **(Note)** After adjustment is completed, shoot the subject and confirm that natural coloring is obtained.

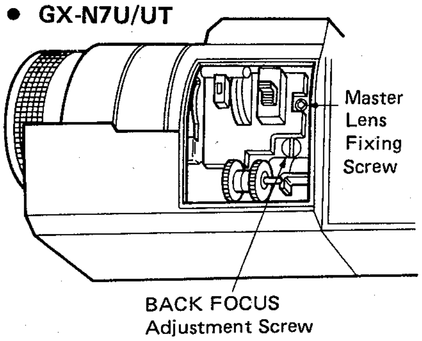
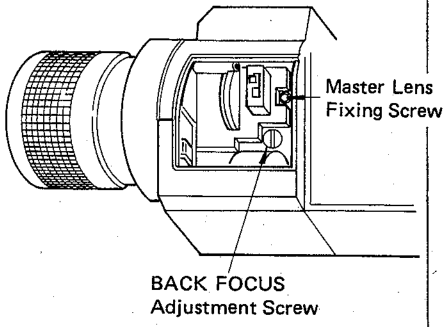
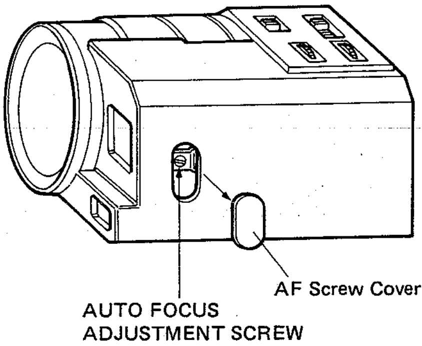
No.	Item	Measuring instrument	Test point and Adjustment part	Description
10.	PHASE SH COMP. Adjustment & FINE Adjustment of DY FOCUS	Oscilloscope (H-rate 10:1) Orange-colored subjects (JVC ORANGE color is preffered.)	VIDEO OUT PHASE SH COMP. VR R124 (H SAW) R125 (H PB) DY FOCUS VR R120 (H SAW) R121 (H PB) R122 (V SAW) R123 (V PB) [MOTHER BOARD]  R125 H PB PHASE SH COMP. R124 H SAW R122 V SAW R121 H PB R120 H SAW R123 V PB DY FOCUS	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Observe the **Monitor TV screen** while shooting at an orange-colored subject, and adjust **R124 (H SAW)** and **R125 (H PB)** so that the entire screen becomes uniformly orange. **(Note)** Conduct this adjustment only when required. 2. Shoot the white pattern and observe the **VIDEO OUT** under the H rate. 3. Adjust **R120 (H SAW)**, **R121 (H PB)**, **R122 (V SAW)**, and **R123 (V PB)** so that the carrier can be minimized and becomes flat.  Fig. 3-20 (a) **(Note)** Adjustment must be limited to the fine adjustment.
		Vectorscope White pattern	VIDEO OUT	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. As shown in **Fig. 3-20 (b)**, adjust **R124 (H SAW)** and **R125 (H PB)** so that the carrier is minimized and positioned at the center. 2. Similarily adjust **R120 (H SAW)**, **R121 (H PB)**, **R122 (V SAW)**, and **R123 (V PB)** so that the carrier is minimized and positioned at the center.  Fig. 3-20 (b)

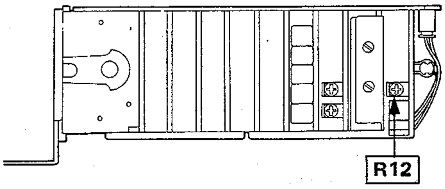
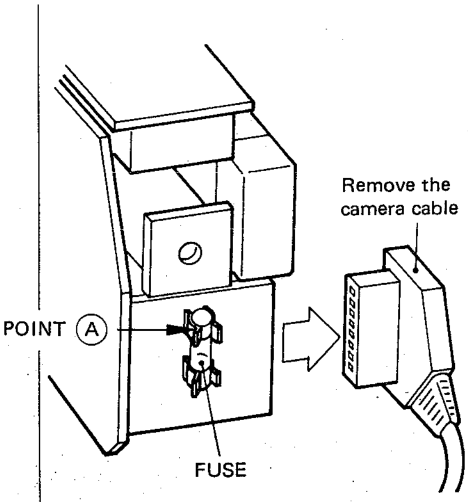
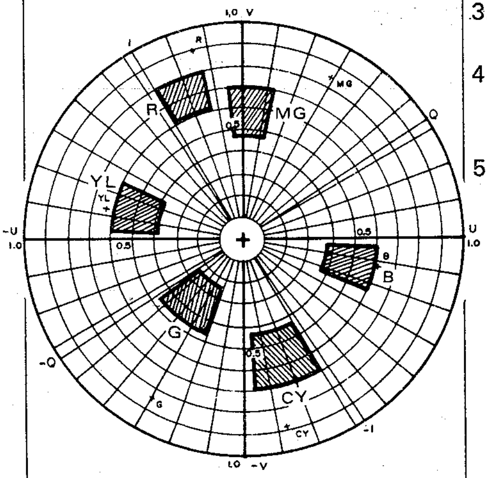
No.	Item	Measuring instrument	Test point and Adjustment part	Description
21.	SHADING COMP. Adjustment (R-CH)	Oscilloscope (H-rate V-rate 10:1) White pattern	J7 (R-Y) [AGC BOARD] SH COMP.-R VR R134 (H SAW) R135 (H PB) R136 (V SAW) R137 (V PB)  V SAW R136 V PB R137 H SAW R134 H PB R135	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure J7 at H-rate and adjust **R134 (H SAW)** and **R135 (H PB)** so that the waveform becomes flat.  Fig. 3-21 (a) 2. Measure J7 at V-rate and adjust **R136 (V SAW)** and **R137 (V PB)** so that the wave form becomes flat.  Fig. 3-21 (b)
		Vectorscope White pattern	VIDEO OUT	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Alternately adjust **R134 (H SAW), R135 (H PB), R136 (V SAW)** and **R137 (V PB)** so that the carrier displayed on the vectorscope is positioned at center and minimized.  Fig. 3-21 (c) **(Note)** The adjustment can be facilitated by raising the gain of the vectorscope.

No.	Item	Measuring instrument	Test point and Adjustment part	Description
	(B-CH)	Oscilloscope (H-rate V-rate 10:1) **White pattern**	J6 (Y-B) [AGC BOARD] SH COMP.-B VR R138 (H SAW) R139 (H PB) R140 (V SAW) R141 (V PB) [MOTHER BOARD]  V SAW R140 H PB R139 V PB R141 H SAW R138	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Measure J6 at H-rate and adjust **R138 (H SAW)** and **R139 (H PB)** so that the waveform becomes flat.  Fig. 3-21 (d) 2. Measure J6 at V-rate and adjust **R140 (V SAW)** and **R141 (V PB)** so that the waveform becomes flat.  Fig. 3-21 (e)
		Vectorscope **White pattern**	VIDEO OUT	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Alternately adjust **R138 (H SAW), R139 (H PB), R140 (V SAW)** and **R141 (V PB)** so that the carrier displayed on the vectorscope is positioned at center and minimized.  Fig. 3-21 (f) **(Note)** The adjustment can be facilitated by raising the gain of the vectorscope.

No.	Item	Measuring instrument	Test point and Adjustment part	Description
22.	CHROMA LIMITER Adjustment	Oscilloscope (H-rate 10:1) Color bar pattern (CC-2T)	VIDEO OUT R43 (CHROMA LIMITER) [AGC BOARD] 	○ **Set the iris so that the Y level of Yellow becomes 0.7V under VIDEO OUT (Setting is facilitated by preventing the color from appearing through turning R43).** (On GX-N4U set R213 (IRIS SET); after adjustment is completed, readjust the AUTO IRIS.) 1. Adjust **R43 (CHROMA LIMITER)** to a point just before the yellow carrier becomes compressed, as shown in **Fig. 3-22.**  Fig. 3-22
23.	OUTDOOR R.B GAIN Adjustment	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R242 (OUTDOOR B SET) R244 (OUTDOOR R SET) [MOTHER BOARD] 	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Mount a **C10 C.C. filter** on the lens and set the AUTO WHITE SWITCH to "OUTDOOR." 2. Alternately adjust **R242 (OUTDOOR B SET)** and **R244 (OUTDOOR R SET)** to minimize the carrier of the waveform.  Fig. 3-23 (a)
		Vectorscope Gray scale pattern	VIDEO OUT	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Mount a **C10 C.C. filter** on the lens and set the AUTO WHITE SWITCH to "OUTDOOR." 2. Alternately adjust **R242 (OUTDOOR B SET)** and **R244 (OUTDOOR R SET)** so that the carrier displayed on the vectorscope is positioned at center and minimized.  Fig. 3-23 (b)

No.	Item	Measuring instrument	Test point and Adjustment part	Description
24.	AUTO WHITE BALANCE Adjustment (GX-N7U/UT only)	Oscilloscope (H-rate 10:1) Gray scale pattern	VIDEO OUT R01 (A/W B. PRESET) R02 (A/W R. PRESET) R05 (A/W B. GAIN) R06 (A/W R. GAIN) [B. SET BOARD]  A/W B. PRESET R01 A/W B. GAIN R05 A/W R. PRESET R02 A/W R. GAIN R06 W T  Fig. 3-24 (a)	**Adjustment procedure with oscilloscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Set the **AUTO WHITE SWITCH** to "AUTO" and preset **R05 (A/W B. GAIN)** and **R06 (A/W R. GAIN)** at the mechanical centers. 2. As shown in **Fig. 3-24 (b)**, adjust **R01 (A/W B. PRESET)** and **R02 (A/W R. PRESET)** so that the carrier is minimized. 3. Next, mount **C10 C.C. filters** on both the lens and the A/W sensor (refer to **Fig. 3-24 (a)**), and as shown in **Fig. 3-24 (b)**, adjust **R05 (A/W B. GAIN)** and **R06 (A/W R. GAIN)** so that the carrier is minimized.  Fig. 3-24 (b) 4. Repeat above steps 2 and 3, and adjust so that carrier difference between the two is eliminated.
		Vectorscope Gray scale pattern	VIDEO OUT  Fig. 3-24 (c)	**Adjustment procedure with vectorscope** ○ **Set the IRIS CONTROL SWITCH to AUTO** 1. Set the **AUTO WHITE SWITCH** to "AUTO" and preset **R05 (A/W B. GAIN)** and **R06 (A/W R. GAIN)** at the mechanical centers. 2. As shown in **Fig. 3-24 (c)**, adjust **R01 (A/W B. PRESET)** and **R02 (A/W R. PRESET)** so that the carrier is positioned at the center. 3. Next, mount **C10 C.C. filters** on both the lens and the A/W sensor (refer to **Fig. 3-24 (a)**), and as shown in **Fig. 3-24 (c)**, adjust **R05 (A/W B. GAIN)** and **R06 (A/W R. GAIN)** so that the carrier is positioned at the center. 4. Repeat above steps 2 and 3, and adjust so that carrier transfer between the two is eliminated.

No.	Item	Measuring instrument	Test point and Adjustment part	Description
25.	**BACK FOCUS Adjustment**	**Monitor TV** **Siemens chart**	**VIDEO OUT** **Back Focus Adjustment Screw** ● **GX-N7U/UT**  **Fig. 3-25 (a)** ● **GX-N4U/UT**  **Fig. 3-25 (b)**	○ **Open the iris in a dark location.** 1. Place the **Siemens chart** at least 3 m from the camera. (The chart should be placed as far away as possible.) 2. Adjust the focus to the chart in the TELE position and confirm that the focus is not disturbed when the camera is set to the WIDE position. 3. If the focus is disturbed, loosen the **Master Lens Fixing Screw** and then adjust the **Back Focus with the back focus adjustment tool** until correct focus is established. 4. Repeat **step 3 and 4** as necessary to obtain optimum focus.
26.	**AUTO FOCUS Adjustment (GX-N7U/UT only)**	**Monitor TV** **Siemens chart**	**VIDEO OUT** **AUTO FOCUS ADJ. Screw**  **Fig. 3-26**	○ **Open the iris in a dark location.** 1. Detach the screw cover shown in **Fig. 3-26.** 2. Place the **Siemens chart** 2 m distant from the lens and shoot this chart after turning the ZOOM RING fully to the TELE side. 3. Set the **FOCUS SWITCH** to "**AUTO.**" 4. Rotate the FOCUS RING to the near end/far end to cause AUTO FOCUS operation, and confirm that optimum focus is obtained. 5. If the focus is disturbed, rotate the **AUTO FOCUS ADJ. SCREW** while keeping the **FOCUS SWITCH** set at "**AUTO,**" and by adjusting this screw, obtain optimum focus. 6. After adjustment is completed, reinstall the screw cover. **(Note)** Under adjustment in this section, only the measuring distance can be adjusted. As to adjustment of the infrared-ray spot, refer to the Lens Manual.

No.	Item	Measuring instrument	Test point and Adjustment part	Description
27.	BATTERY ALARM Adjustment	DC Power Supply, DC DC Voltmeter	R LED in EVF R12 (ALARM SET)   Fig. 3-27	○ **Disconnect the camera cable.** 1. Connect a DC power supply and DC voltmeter to **Point** Ⓐ shown in the chart on the left, and apply exactly **10.8V.** 2. Adjust **R12 (ALARM SET)** to the point where **LED (R)** in the electronic viewfinder just stops flickering and goes out.
28.	FINAL CHECK	Vectorscope Oscilloscope Color bar pattern, Gray scale pattern & Others	VIDEO OUT  Fig. 3-28	1. Shoot the color bar pattern (CC-2T) in the Auto Iris mode and display the result on a vectorscope. Confirm that the respective color carriers are at the locations indicated in the chart on the right. 2. If the results are not satisfactory, perform readjustment in **3-9, 3-17, 3-19**, etc. 3. Check the operation of Iris Compensation as well as all other switches and functions. 4. Shoot the gray scale pattern and check γ, White Balance, Carrier Balance, Y SET UP etc. at VIDEO OUT. 5. Shoot an appropriate subject and check colors, camera functions etc.

4. ADJUSTMENT OF THE ELECTRONIC VIEWFINDER

- **Preparation**
  - ○ Proceed with this adjustment after completing adjustment of the camera body side (except when only the EVF is to be adjusted).
    When only the EVF is to be adjusted, use a 5V supply voltage and **EVF VIDEO** signal of the standard signal level **(2Vp-p)**.

- **Presetting**

1) Iris switch	→ " Ⓐ " **(AUTO)**
2) " Ⓐ Iris compensation" switch	→ **"0"**
3) White balance	→ " 💡 " **(INDOOR)**
4) R860 BRIGHT VR	→ **To obtain a picture**

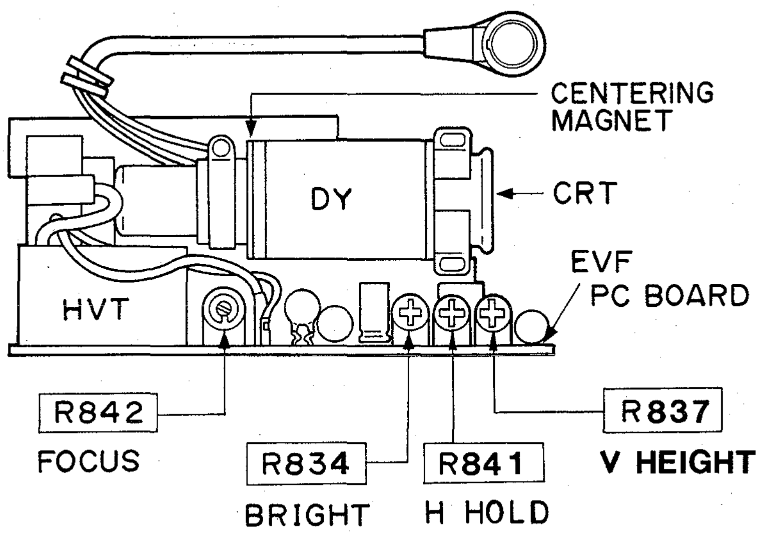
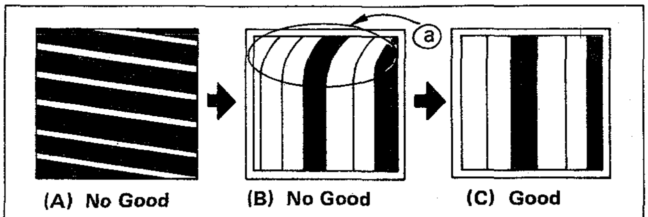


Fig. 4-1 Adjustment location of EVF

- **Adjusting procedures**

	ITEM	PATTERN OR SUBJECT	ADJUSTMENT PARTS	ADJUSTING METHOD
1	**HORIZONTAL SYNC**	Any gray scale pattern, monoscope pattern, or or resolution pattern is OK.	**R841 H. HOLD VR**	1) Set **R841 H. HOLD VR** fully-counterclockwise (in the high H. freq. direction) **Fig. 4-2 (A)** 2) Return **R841 H. HOLD VR** clockwise. Stop turning it when synchronization is adjusted and the bend appearing on the screen upper portion ⓐ is corrected. **Fig. 4-2 (A) → (B) → (C)** **(Note)** Adjustment is facilitated when conducted while shooting a linear pattern such as a color bar pattern.  **(A) No Good** **(B) No Good** **(C) Good** **Fig. 4-2 Adjustment of H. HOLD (using Color bar pattern)**

	ITEM	PATTERN OR SUBJECT	ADJUSTMENT PARTS	ADJUSTING METHOD
2	**VERTICAL AMPLITUDE**	Monoscope pattern or cross-hatch pattern	**R837 V. HEIGHT VR**	Adjust **R837 V. HEIGHT VR** so that the amplitude of the pattern is normal.
3	**PICTURE LOCATION**		**Centering magnet of the Deflection Yoke**	Adjust the **CENTERING MAGNET** so that the center of the pattern coincides with the center of the frame of the EVF screen.
4	**BRIGHTNESS**	Gray scale pattern	**R834 BRIGHT VR**	Turn the **R834 BRIGHT VR** while observing the EVF screen and stop turning it just before the pattern's black portion becomes invisible. **(Note)** Shoot the gray scale pattern so that it fills the whole area of the frame.
5	**FOCUS**	Gray scale pattern or monoscope pattern	**R842 FOCUS VR**	While monitoring the EVF screen turn **R842 FOCUS VR** as far right as possible, as long as the picture is in good focus.
6	**HIGH VOLTAGE CHECK**		————	Connect the high voltage meter of CRT anode and make sure that the meter indicator is within **2.5 ± 0.5 kV.**
7	**FINAL CHECK**	Shoot patterns or other subjects and operate **zoom, focus, iris control switch,** VTR switch, etc.. Thus make sure that brightness, contrast, focus, size and location of the picture, **iris indication, VTR start/stop indication** are all proper. Operate also the WHITE BALANCE SWITCH and make sure that white balance indication (LED indication on the CRT mask area) is properly achieved. Further reduce the camera supply voltage (12V input) and make sure that **battery alarm indication** on the EVF is properly achieved when the voltage is below **ca. 10.8V.**		

GX-N7U/UT
GX-N4U/UT
PARTS LIST

CONTENTS

EXPLODED VIEW OF CAMERA BODY 4

SYSTEM ASSEMBLY REPLACEMENT PARTS LIST 5

PRINTED CIRCUIT BOARD PARTS LIST

1. CA-1071A/CA-1073A MOTHER BOARD 8
2. CA-A001A AUDIO BOARD 14
3. CA-A002A AUDIO BOARD 15
4. CA-B001A PREPROCESS BOARD 16
5. CA-C001A CARRIER MATRIX BOARD 17
6. CA-D001A DETECTOR BOARD 19
7. CA-E001A BLACK SET/AUTO WHITE BOARD 21
8. CA-E003A BLACK SET/AUTO WHITE BOARD 23
9. CA-F001A COLOR GAMMA BOARD 21
10. CA-G001A CDP BOARD 25
11. CA-H001A AGC BOARD 27
12. CA-J001A ENC. BOARD 29
13. CA-K001A SSG BOARD 31
14. CA-L001A VTR BOARD 33
15. CA-M001A MIC BOARD 34
16. CA-M002A MIC BOARD 34
17. CA-2071A PREAMP BOARD 35
18. CA-6071A EVF BOARD 36
19. CA-8071A BIAS LIGHT BOARD 38
20. CA-9071A VTR SW BOARD 38

PACKING 39

PACKING PARTS LIST 39

GX-N7U/UT : No. 5506
GX-N4U/UT : No. 5519
May. 1984

IMPORTANT SAFETY NOTICE:

Components identified by the ⚠ symbol in this parts information have special characteristics for safety.
These critical safety components are designed to "fail safe" under abnormal conditions. The failure of any one component often causes stress in other components which could lead to smoke or fire or other hazards. Because of this, components are selected and tested under actual fault conditions to ensure safe operation. Replacement with anything other than the identical JVC part may present a hazard.

NOTE 1 PART SUPPLY OF NO PART NUMBER

The parts indicated with — in the Part No. column will not be supplied.

NOTE 2 DECODING OF RESISTOR, CAPACITOR AND TOLERANCE

RESISTOR All resistance values in ohms K: 1000 M: 1000000		**CAPACITOR** Capacitance values in pF or in μF		**TOLERANCE**	
C R	Carbon Resistor	BP E Cap.	Bi-Polar (or Non-Polar) Electrolytic Capacitor	F	±1%
CH MG R	Chip Metal Glaze Resistor			G	±2%
CH V R	Chip Variable Resistor	C Cap.	Ceramic Capacitor	J	±5%
MF R	Coating Metal Film Resistor	CH AL BP Cap.	Chip Aluminum Bi-Polar Capacitor	K	±10%
Comp. R	Composition Resistor	CH AL BP E Cap.	Chip Aluminum Bi-Polar Electrolytic Capacitor	M	±20%
F R	Fusible Resistor			N	±30%
HV R	High Voltage Resistor	CH AL E Cap.	Chip Aluminum Electrolytic Capacitor	H	+50 -10 %
LPTC R	Linear Positive Temperature Coefficient Resistor	CH C Cap.	Chip Ceramic Capacitor		
		CH Tan. E Cap.	Chip Tantalum Electrolytic Capacitor	P	+100 -0 %
MF R	Metal Film Resistor	E Cap.	Electrolytic Capacitor		
MG R	Metal Glaze Resistor	M Cap.	Mylar Capacitor	R	+30 -10 %
OM R	Oxide Metal Film Resistor	MM Cap.	Metalized Mylar Capacitor		
P R	Plate Resistor	MP Cap.	Metalized Polystyrol Capacitor	Z	+80 -20 %
UNF R	Nonflammable Resistor	MPP Cap.	Metalized PP Capacitor		
V R	Variable Resistor	PP Cap.	Polypropylene Capacitor		
		PS Cap.	Polystyrol Capacitor		
		Tan. Cap.	Tantalum Capacitor		

GX-N7U/UT, GX-N4U/UT PRINTED CIRCUIT BOARD LIST

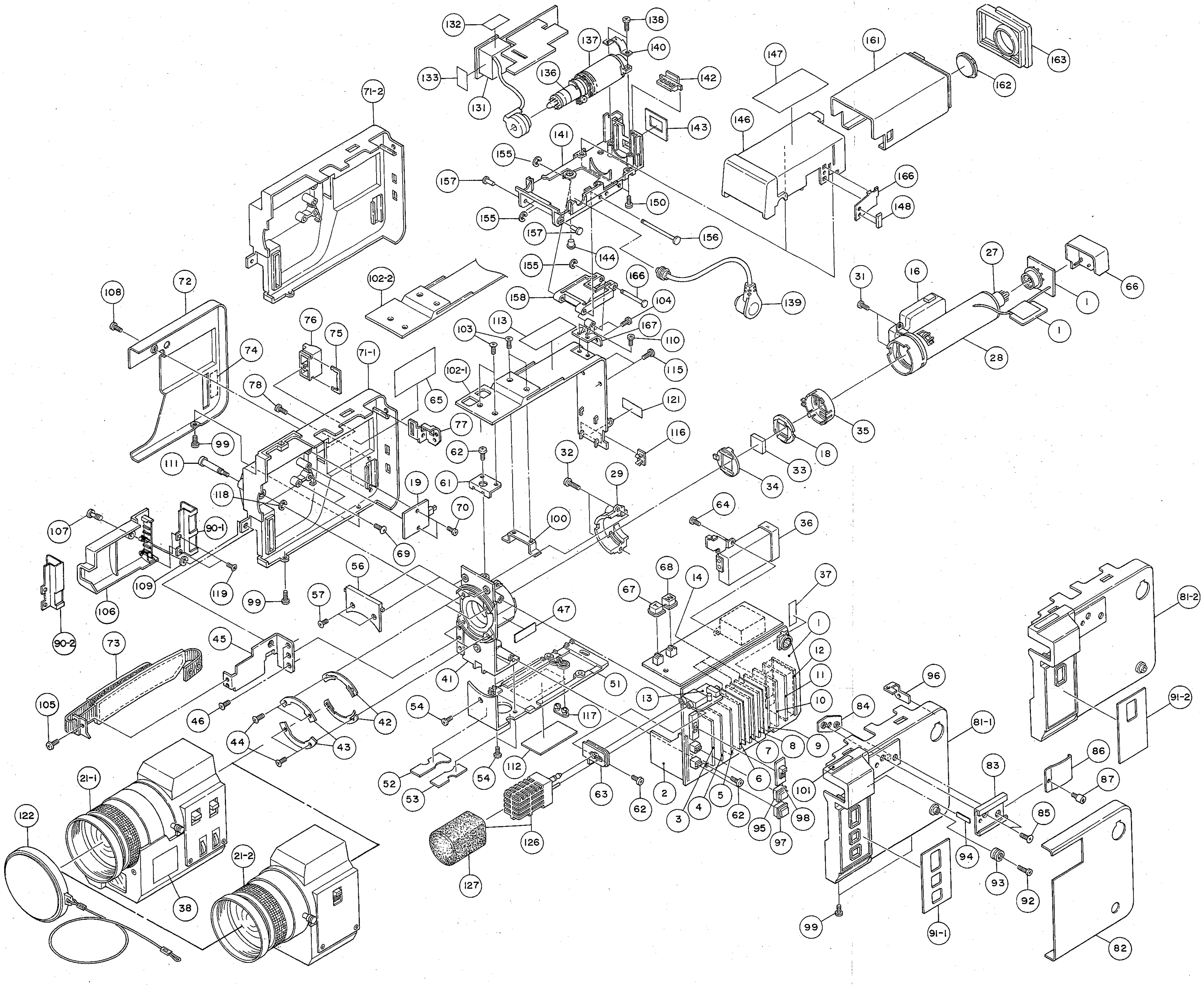
PART NAME	PART NO.		Interchangeability
	GX-N7U/UT	GX-N4U/UT	
MOTHER BOARD	CA-1071A	CA-1073A	X
PREAMP BOARD	CA-2071A	CA-2071A	——
AUDIO BOARD	CA-A001A	CA-A002A	X
PREPROCESS BOARD	CA-B001A	CA-B001A	——
CARRIER MATRIX BOARD	CA-C001A	CA-C001A	——
DETECTOR BOARD	CA-D001A	CA-D001A	——
BLACK SET / AUTO WHITE BOARD	CA-E001A	CA-E003A	X
COLOR GAMMA BOARD	CA-F001A	CA-F001A	——
CDP BOARD	CA-G001A	CA-G001A	——
AGC BOARD	CA-H001A	CA-H001A	——
ENCODER BOARD	CA-J001A	CA-J001A	——
SSG BOARD	CA-K001A	CA-K001A	——
VTR TRIG. & BATT. ALARM BOARD	CA-L001A	CA-L001A	——
MIC BOARD	CA-M001A	CA-M002A	X
EVF BOARD	CA-6071A	CA-6071A	——
BIAS LIGHT BOARD	CA-8071A	CA-8071A	——
VTR SW BOARD	CA-9071A	CA-9071A	——

X : Interchangeability is not exist.

MAIN PART DIFFERENCES BETWEEN GX-N7U/UT AND GX-N4U/UT

Page	View No.	PART NAME	PART NO.			
			GX-N7U	GX-N7UT	GX-N4U	GX-N4UT
5	1	Mother Board	CA-1071A	CA-1071A	CA-1073A	CA-1073A
″	2	Audio Board	CA-A001A	CA-A001A	CA-A002A	CA-A002A
″	6	Black Set/Auto White Board	CA-E001A	CA-E001A	CA-E003A	CA-E003A
″	13	Mic Board	CA-M001A	CA-M001A	CA-M002A	CA-M002A
″	21	Zoom Lens	CLC02206-A-BFZ	CLC02206-A-BFZ	CLC03206-A-B	CLC03206-A-B
6	67	Zoom Knob-T	CM42452-001	CM42452-001	——	——
″	68	Zoom Knob-W	CM42453-001	CM42453-001	——	——
″	71	Body Cover-L	CM10335-001-M0	CM10335-001-M0	CM10335-003-M0	CM10335-003-M0
″	81	Body Cover-R	CM10334-001-M0	CM10334-001-M0	CM10334-002-M0	CM10334-002-M0
″	91	Control Plate	CM31209-001	CM31209-001	CM31209-003	CM31209-003
″	94	Mic Label	CM42454-A01	CM42454-A01	——	——
″	95	Push Knob	CM42448-A02	CM42448-A02	——	——
″	97	Push Knob	CM42448-A01	CM42448-A01	——	——
″	98	Slide Knob	CM42449-001	CM42449-001	CM42496-001	CM42496-001
″	102	Top & Rear Cover	CM20540-001-M0	CM20540-001-M0	CM20540-002-M0	CM20540-002-MO
″	112	Name Plate	CM31245-001	CM31245-001	CM31245-002	CM31245-002
7	126	Mic	CE40698-00A	CE40698-00A	CE40705-00A	CE40705-00A
36	8	Inst. Book	GX-N7U-IB-A	GX-N7UT-IB-A	GX-N4U-IB-A	GX-N4UT-IB-A
″	17	Packing Case	CP20065-023	CP20065-038	CP20065-027	CP20065-037
″	90	Socket Holder	CM42620-001	CM42620-001	CM42620-002	CM42620-002

EXPLODED VIEW OF CAMERA BODY


132
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71-2
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102-1
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61
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107
90-1
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91-2
44
43
7
8
9
81-1
86
21-1
52
54
112
63
6
83
87
122
53
2
5
101
85
21-2
126
62
4
3
62
95
98
94
93
38
127
97
92
99
91-1
82

SYSTEM ASSEMBLY REPLACEMENT PARTS LIST

Supply of Mother Board and Module Board

Although Module Boards CA-A001 ~ CA-M001 are soldered onto the Mother Boards, the circuit board as a completed set is not supplied.
In other words, the Mother Board and each Module Board are individually supplied.
Pay full attention to this point as to service/maintenance.

VIEW NO.	SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
1		⚠	———	MOTHER BOARD	CA-1071A, For GX-N7U/UT
〃		⚠	———	MOTHER BOARD	CA-1073A, For GX-N4U/UT
2		⚠	CA-A001A	AUDIO BOARD	For GX-N7U/UT
〃		⚠	CA-A002A	AUDIO BOARD	For GX-N4U/UT
3		⚠	CA-B001A	PREPROCESS BOARD	
4		⚠	CA-C001A	CARRIER MATRIX BOARD	
5		⚠	CA-D001A	DETECTOR BOARD	
6		⚠	CA-E001A	BLACK SET/ AUTO WHITE BOARD	For GX-N7U/UT
〃		⚠	CA-E003A	BLACK SET/ AUTO WHITE BOARD	For GX-N4U/UT
7		⚠	CA-F001A	COLOR GAMMA BOARD	
8		⚠	CA-G001A	CDP BOARD	
9		⚠	CA-H001A	AGC BOARD	
10		⚠	CA-J001A	ENC. BOARD	
11		⚠	CA-K001A	SSG BOARD	
12		⚠	CA-L001A	VTR TRIG. & BATT. ALARM BOARD	
13		⚠	CA-M001A	MIC BOARD	For GX-N7U/UT
〃		⚠	CA-M002A	MIC BOARD	For GX-N4U/UT
14		⚠	CM42607-001	Module Insulator	Not included on the module board
16		⚠	CA-2071A	PREAMP BOARD	
18		⚠	———	BIAS LIGHT BOARD	CA-8071A
19		⚠	———	VTR SW BOARD	CA-9071A
21-1			CLC02206-A-BFZ	Zoom Lens	For GX-N7U/UT
〃			DA7-0692-000-000	Hood	Included Zoom Lens (View No. 21-1)
21-2			CLC03206-A-B	Zoom Lens	For GX-N4U/UT
〃			DA7-0692-001-000	Hood	Included Zoom Lens (View No. 21-2)
27		⚠	S4250	Pickup Tube	1/2" Newvicon
28		⚠	CE40688-00A	Def. Yoke	
29			CM31196-001	DY Holder	
31			SPSP2603Z	Screw	x 2 For securing the Preamp Board
32			SPSP2606Z	Screw	x 2 For securing the DY Holder
33			CJ39646-00A	L P Filter Ass'y	
34			CM20531-001	Light Guide	
35			CM20532-001	LPF Holder	
36			CE40687-00A	SW Regulator	
37			C40924	Caution Label	
38			CM42654-001	AF Label	
41			CM10320-00A	Chassis	
42			CM42434-001	Mount Spring	x 2
43			CM42433-001	Mount Plate	x 2
44			SSEK2035	Mini Screw	x 4
45			CM31240-002	Grip Bracket	
46			SHSK2040M	Screw	x 3 For securing the Grip Bracket
47			CM40442-003	Insulator	
51			CM20539-00A-MO	Bottom Base Ass'y	
52			CM42457-001	Tripod Leather-L	Left side
53			CM42458-001	Tripod Leather-R	Right side
54			SHSK2040M	Screw	x 3 For securing the Bottom Base Ass'y

VIEW NO.	SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
56			CM42439-001	Front Cover	
57			SHSK2040M	Screw	x 2 For securing the Front Cover
61			CM42437-001	PB Bracket	
62			SPSP2606Z	Screw	x 3 For securing the Mother Board
63		⚠	CM42440-001	Mic Cover	
64			SPSK2040R	Mini Screw	For securing the SW Regulator
65			C41632-4	Caution Label	
66			CM42594-001	Socket Insulator	
67			CM42452-001	Zoom Knob-T	GX-N7U/UT only
68			CM42453-001	Zoom Knob-W	GX-N7U/UT only
69			SBSB2606Z	Tap Screw	x 2
70			C41474-4	Tap Screw	x 2
71-1		⚠	CM10335-001-MO	Body Cover-L	Left side, For GX-N7U/UT
71-2		⚠	CM10335-003-MO	Body Cover-L	Left side, For GX-N4U/UT
72			CM20537-001	Body AL Cover (L)	Left side
73			CM31211-00A	Belt Ass'y	
74			CM40869-001	Caution Label	
75			CM42498-001	Knob Lock	
76			CM42447-001	VTR Knob	
77			CM42615-001	Hook Bracket (A)	
78			SPSH2060M	Mini Screw	x 2
81-1		⚠	CM10334-001-MO	Body Cover-R	Right side, For GX-N7U/UT
81-2		⚠	CM10334-002-MO	Body Cover-R	Right side, For GX-N4U/UT
82			CM20534-001	Body AL Cover-R	Right side
83			CM42443-A01	Accessory Shoe	
84			CM42473-A01	Plate Nut-S	
85			SSEP2604	Screw	x 2
86			CM42442-001	Shoe Spring	
87			CM42444-001	Shoe Screw	
90-1			CM42620-001	Socket Holder	For GX-N7U/UT
90-2			CM42620-002	Socket Holder	For GX-N4U/UT
91-1			CM31209-001	Control Plate	For GX-N7U/UT
91-2			CM31209-003	Control Plate	For GX-N4U/UT
92			C41474-4	Tap Screw	
93			CM42503-001	CG Hook	
94			CM42454-A01	Mic Label	GX-N7U/UT only
95			CM42448-A02	Push Knob	GX-N7U/UT only
96			CM42614-001	Plate Nut-R (A)	
97			CM42448-A01	Push Knob	GX-N7U/UT only
98			CM42449-001	Slide Knob	For GX-N7U/UT
〃			CM42496-001	Slide Knob	For GX-N4U/UT
99			SPSH2060M	Mini Screw	x 4
100			CM42613-001	Plate Nut-T	
101			CM40868-003	Caution Label	
102-1		⚠	CM20540-001-MO	Top & Rear Cover	For GX-N7U/UT
102-2		⚠	CM20540-002-MO	Top & Rear Cover	For GX-N4U/UT
103			SHSK2040M	Mini Screw	x 4
104			SPSH2060M	Mini Screw	x 2
105			SDSP2606M	Screw	
106			CM31210-A01	Grip Cover	
107			CM42446-A01	G Cover Screw	
108			SPSK2040R	Mini Screw	
109			REE2000	E Ring	
110			SPSK2045M	Mini Screw	x 4
111			CM42445-A01	Lens Lock Screw	
112			CM31245-001	Name Plate	For GX-N7U/UT
〃			CM31245-002	Name Plate	For GX-N4U/UT
113			CM41775-5	Caution Label	
115			SPSH2060M	Mini Screw	x 2
116			CM42455-001	VTR SW Cap	

VIEW NO.	SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
117			CM42493-001	VR Cap	
118			REE2500	E Ring	
119			C41474	Tap. Screw	x 2
121			C41777-2	UL Label	
122			CM42571-00A	Lens Cap Ass'y	With string
126			CE40698-00A	Mic	STEREO, For GX-N7U/UT
〃			CE40705-00A	Mic	MONO, For GX-N4U/UT
127			GU-PW-080-PUE	Wind Guard	Included Mic (View No. 126)
131			———	EVF Board	CA-6071A
132			C41708-2	Caution Label	
133			C40954-2	Caution Label	High Voltage Dangerous
136		⚠	M01JGU9WB	Picture Tube	1/2 " B/W
137		⚠	CE40679-00A	DY Ass'y	
138			C41474-2	Tap Screw	x 2 For fastening the DY Ass'y to the cover
139			CH41007-00A	EVF Cable	
140			CM42589-001	DY Holder	
141		⚠	CM10324-001-MO	EVY Cover (B)	Bottom Side
142			CM42462-001	Light Guide	For diffusing the LED light
143			CM42463-A01	Indicator Film	
144			CM30564-001	Hole Plug	
146		⚠	CM10323-001-MO	EVF Cover (T)	Top side
147			CM40100-005	Caution Label	
148			CM42465-A01	Lock Knob	
149			CM42466-A01	Lock Spring	
150			C41474-2	Top Screw	x 2 For fastening the EVF cover
155			CM42590-001	E Ring	x 4
156			CM42460-A02	Shaft	
157			CM42460-A03	Shaft	x 2
158		⚠	CM42468-001	Long Arm	
161		⚠	CM31307-00A	Slide Cover Ass'y	
163		⚠	CM31212-001	Eye Cup	
166			CM42460-A01	Shaft	
167			CM31297-001	EVF Holder (A)	

PRINTED CIRCUIT BOARD PARTS LIST

1. CA-1071A/CA-1073A MOTHER BOARD

1-1 CA-1071A MOTHER BOARD

CA-1071A is used in GX-N7U/UT and CA-1073A in GX-N4U/UT.
CA-1071A and CA-1073A are not interchangeable with each other.

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
R1120		CE40412-104WYA	CH V R	100kΩ	H SAW	DY FOCUS
R1121		〃 -104WYA	〃	〃	H PB	
R1122		〃 -104WYA	〃	〃	V SAW	
R1123		〃 -104WYA	〃	〃	V PB	
R1124		〃 -104WYA	〃	〃	H SAW	PHASE SH COMP.
R1125		〃 -104WYA	〃	〃	H PB	
R1126		〃 -104XYA	〃	〃	H SAW	H BL COMP.-Y
R1127		〃 -104XYA	〃	〃	H PB	
R1128		〃 -104XYA	〃	〃	V SAW	V BL COMP.-Y
R1129		〃 -104XYA	〃	〃	V PB	
R1130		〃 -104XYA	〃	〃	H SAW	H BL COMP.-R
R1131		〃 -104XYA	〃	〃	H PB	
R1132		〃 -104WYA	〃	〃	H SAW	H BL COMP.-B
R1133		〃 -104XYA	〃	〃	H PB	
R1134		〃 -104WYA	〃	〃	H SAW	SH COMP.-R
R1135		〃 -104WYA	〃	〃	H PB	
R1136		〃 -104WYA	〃	〃	V SAW	
R1137		〃 -104WYA	〃	〃	V PB	
R1138		〃 -104XYA	〃	〃	H SAW	SH COMP.-B
R1139		〃 -104XYA	〃	〃	H PB	
R1140		〃 -104XYA	〃	〃	V SAW	
R1141		〃 -104XYA	〃	〃	V PB	
R1142		〃 -104XYA	〃	〃	V SAW	V BL COMP.-R
R1143		〃 -104XYA	〃	〃	V PB	
R1144		〃 -104WYA	〃	〃	V SAW	V BL COMP.-B
R1145		〃 -104XYA	〃	〃	V PB	
R1213		〃 -223XYA	〃	22kΩ	AUTO IRIS SET	
R1215		〃 -102WYA	〃	1kΩ	LIGHT BALANCE	BIAS LIGHT
R1216		〃 -103WYA	〃	10kΩ	LIGHT LEVEL	
R1241		〃 -103XYA	〃	〃	IN DOOR B SET	AW BAL. SET
R1242		〃 -103WYA	〃	〃	OUT DOOR B SET	
R1243		〃 -103XYA	〃	〃	IN DOOR R SET	
R1244		〃 -103XYA	〃	〃	OUT DOOR R SET	
R1261		〃 -472XYA	〃	4.7kΩ	5V ADJ.	
R1305		A76225-205A	V R	2MΩ	FOCUS	
R1313		CE40624-105A	〃	1MΩ	TARGET	
R1327		CE40412-681XYA	CH V R	680Ω	H CENTER	
R1331		〃 -471XYA	〃	470Ω	H LIN-3	
R1332		〃 -103XYA	〃	10kΩ	H LIN-1	
R1339		〃 -681WYA	〃	680Ω	H LIN-2	
R1349		CE40685-224WYA	〃	220kΩ	V HEIGHT	
R1355		CE40412-682XYA	〃	6.8kΩ	V CENTER	
Resistor						
R1101		QRS148J-332YL	CH MG R	3.3kΩ	1/4W	J
R1102		〃 -152YL	〃	1.5kΩ	〃	〃
R1103		〃 -103YL	〃	10kΩ	〃	〃
R1104		〃 -152YL	〃	1.5kΩ	〃	〃
R1105		〃 -102YL	〃	1kΩ	〃	〃
R1106		〃 -272YL	〃	2.7kΩ	〃	〃
R1107		〃 -123YL	〃	12kΩ	〃	〃
R1108		〃 -563YL	〃	56kΩ	〃	〃
R1109		〃 -822YL	〃	8.2kΩ	〃	〃

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
R1111		QRS148J-683YL	CH MG R	68kΩ	1/4W	J
R1112		〃 -105YL	〃	1MΩ	〃	〃
R1113		〃 -222YL	〃	2.2kΩ	〃	〃
R1114		〃 -471YL	〃	470Ω	〃	〃
R1115		〃 -102YL	〃	1kΩ	〃	〃
R1150		〃 -104YL	〃	100kΩ	〃	〃
R1151		〃 -104YL	〃	〃	〃	〃
R1152		〃 -104YL	〃	〃	〃	〃
R1153		〃 -104YL	〃	〃	〃	〃
R1154		〃 -104YL	〃	〃	〃	〃
R1155		〃 -104YL	〃	〃	〃	〃
R1156		〃 -104YL	〃	〃	〃	〃
R1157		〃 -104YL	〃	〃	〃	〃
R1158		〃 -104YL	〃	〃	〃	〃
R1159		〃 -104YL	〃	〃	〃	〃
R1160		〃 -104YL	〃	〃	〃	〃
R1161		〃 -104YL	〃	〃	〃	〃
R1162		〃 -104YL	〃	〃	〃	〃
R1163		〃 -104YL	〃	〃	〃	〃
R1164		〃 -104YL	〃	〃	〃	〃
R1165		〃 -104YL	〃	〃	〃	〃
R1166		〃 -104YL	〃	〃	〃	〃
R1167		〃 -104YL	〃	〃	〃	〃
R1168		〃 -104YL	〃	〃	〃	〃
R1169		〃 -104YL	〃	〃	〃	〃
R1170		〃 -104YL	〃	〃	〃	〃
R1171		〃 -104YL	〃	〃	〃	〃
R1172		〃 -104YL	〃	〃	〃	〃
R1173		〃 -104YL	〃	〃	〃	〃
R1174		〃 -104YL	〃	〃	〃	〃
R1175		〃 -104YL	〃	〃	〃	〃
R1176		〃 -104YL	〃	〃	〃	〃
R1177		〃 -104YL	〃	〃	〃	〃
R1178		〃 -104YL	〃	〃	〃	〃
R1179		〃 -104YL	〃	〃	〃	〃
R1180		〃 -104YL	〃	〃	〃	〃
R1181		〃 -104YL	〃	〃	〃	〃
R1182		〃 -104YL	〃	〃	〃	〃
R1183		〃 -104YL	〃	〃	〃	〃
R1184		〃 -104YL	〃	〃	〃	〃
R1185		〃 -104YL	〃	〃	〃	〃
R1186		〃 -104YL	〃	〃	〃	〃
R1187		〃 -104YL	〃	〃	〃	〃
R1188		〃 -104YL	〃	〃	〃	〃
R1189		〃 -104YL	〃	〃	〃	〃
R1190		〃 -104YL	〃	〃	〃	〃
R1191		〃 -104YL	〃	〃	〃	〃
R1192		〃 -104YL	〃	〃	〃	〃
R1193		〃 -104YL	〃	〃	〃	〃
R1194		〃 -104YL	〃	〃	〃	〃
R1195		〃 -104YL	〃	〃	〃	〃
R1196		〃 -563YL	〃	56kΩ	〃	〃
R1201		〃 -104YL	〃	100kΩ	〃	〃
R1202		〃 -333YL	〃	33kΩ	〃	〃
R1203		〃 -223YL	〃	22kΩ	〃	〃
R1204		〃 -822YL	〃	8.2kΩ	〃	〃
R1205		〃 -103YL	〃	10kΩ	〃	〃
R1206		〃 -103YL	〃	〃	〃	〃
R1214		〃 -330YL	〃	33Ω	〃	〃
R1217		〃 -221YL	〃	220Ω	〃	〃

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
R1221		QRS148J-102YL	CH MG R	1kΩ	1/4W	J
R1231		〃 -102YL	〃	〃	〃	〃
R1232		〃 -272YL	〃	2.7kΩ	〃	〃
R1233		〃 -153YL	〃	15kΩ	〃	〃
R1247		〃 -681YL	〃	680Ω	〃	〃
R1248		〃 -681YL	〃	〃	〃	〃
R1251		〃 -150YL	〃	15Ω	〃	〃
R1262		〃 -333YL	〃	33kΩ	〃	〃
R1263		〃 -102YL	〃	1kΩ	〃	〃
R1269		〃 -562YL	〃	5.6kΩ	〃	〃
R1270		〃 -122YL	〃	1.2kΩ	〃	〃
R1271		〃 -682YL	〃	6.8kΩ	〃	〃
R1300		QRD162J-105	C R	1MΩ	1/6W	〃
R1301		QRS148J-104YL	CH MG R	100kΩ	1/4W	〃
R1302		〃 -222YL	〃	2.2kΩ	〃	〃
R1303		〃 -391YL	〃	390Ω	〃	〃
R1304		〃 -474YL	〃	470kΩ	〃	〃
R1306		〃 -102YL	〃	1kΩ	〃	〃
R1307		〃 -683YL	〃	68kΩ	〃	〃
R1308		〃 -562YL	〃	5.6kΩ	〃	〃
R1310		〃 -122YL	〃	1.2kΩ	〃	〃
R1311		〃 -154YL	〃	150kΩ	〃	〃
R1312		〃 -154YL	〃	〃	〃	〃
R1314		〃 -103YL	〃	10kΩ	〃	〃
R1315		〃 -222YL	〃	2.2kΩ	〃	〃
R1316		〃 -123YL	〃	12kΩ	〃	〃
R1317		〃 -333YL	〃	33kΩ	〃	〃
R1319		〃 -392YL	〃	3.9kΩ	〃	〃
R1321		〃 -154YL	〃	150kΩ	〃	〃
R1322		〃 -682YL	〃	6.8kΩ	〃	〃
R1323		〃 -104YL	〃	100kΩ	〃	〃
R1324		〃 -473YL	〃	47kΩ	〃	〃
R1325		〃 -102YL	〃	1kΩ	〃	〃
R1326		〃 -6R8YL	〃	6.8Ω	〃	〃
R1328		〃 -221YL	〃	220Ω	〃	〃
R1329		〃 -101YL	〃	100Ω	〃	〃
R1333		A75575-332	Thermistor	3.3kΩ		
R1334		QRS148J-272YL	CH MG R	2.7kΩ	1/4W	J
R1335		〃 -103YL	〃	〃	〃	〃
R1336		〃 -103YL	〃	〃	〃	〃
R1337		〃 -182YL	〃	1.8kΩ	〃	〃
R1338		〃 -122YL	〃	1.2kΩ	〃	〃
R1341		〃 -151YL	〃	150Ω	〃	〃
R1342		〃 -392YL	〃	3.9kΩ	〃	〃
R1343		〃 -103YL	〃	10kΩ	〃	〃
R1344		〃 -103YL	〃	10kΩ	〃	〃
R1345		〃 -123YL	〃	12kΩ	〃	〃
R1346		〃 -472YL	〃	4.7kΩ	〃	〃
R1347		〃 -103YL	〃	10kΩ	〃	〃
R1348		〃 -224YL	〃	220kΩ	〃	〃
R1351		〃 -222YL	〃	2.2kΩ	〃	〃
R1352		〃 -560YL	〃	56Ω	〃	〃
R1353		〃 -122YL	〃	1.2kΩ	〃	〃
R1354		〃 -471YL	〃	470Ω	〃	〃
R1361		〃 -122YL	〃	1.2kΩ	〃	〃
Capacitor						
C1101		CE40713-475WM	CH Tan. E Cap.	4.7μF	10V	M
C1102		〃 -475WM	〃	〃	〃	〃

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
C1103		〃 -475WM	〃	〃	〃	〃
C1104		QCY81HK-472YLA	CH C Cap.	4700pF	50V	K
C1106		QCF81HZ-473YLA	〃	0.047µF	〃	Z
C1107		QCF81HZ-103YLA	CH C Cap.	0.01µF	50V	Z
C1108		QCS81HJ -101YLA	〃	100pF	〃	J
C1109		QCF81HZ-473YLA	〃	0.047µF	〃	Z
C1201		〃 -103YLA	〃	0.01µF	〃	〃
C1202		〃 -103YLA	〃	〃	〃	〃
C1221		QER40JM-107M	E Cap.	100µF	6.3V	M
C1251		CE40036-475WM	CH Tan. E Cap.	4.7µF	35V	〃
C1253		QCF81HZ-473YLA	CH C Cap.	0.047µF	50V	Z
C1261		CE40713-475XM	CH Tan. E Cap.	4.7µF	10V	M
C1262		QCF81HZ-473YLA	CH C Cap.	0.047µF	50V	Z
C1300	⚠	A46546-A	HV C Cap.	0.01µF		
C1301		QEU41AM-227M	E Cap.	220µF	10V	M
C1302		QCY81HK-473YLA	CH C Cap.	0.047µF	50V	K
C1303		QFP32DG-272S	PP Cap.	2700pF	200V	G
C1304		QET42AR-335	E Cap.	3.3µF	100V	M
C1305		〃 -105	〃	1µF	〃	
C1306		QFM72DK-153M	M Cap.	0.015µF	200V	K
C1307		QCS81HJ-331YLA	CH C Cap.	330pF	50V	J
C1308		QCY81HK-103YLA	〃	0.01µF	〃	K
C1309		QEK41JM-105M	E Cap.	1µF	6.3V	M
C1311		QET42AR-105	〃	〃	100V	〃
C1312		QCS81HJ-221YLA	CH C Cap.	220pF	50V	J
C1313		QEE41CK-476M	Tan. Cap.	47µF	16V	K
C1314		QET41CR-106	E Cap.	10µF	〃	M
C1315		QEE41VK-105M	Tan. Cap.	1µF	35V	K
C1316		QCY81HK-102YLA	CH C Cap.	1000pF	50V	
C1317		QET41CR-106	E Cap.	10µF	16V	M
C1318		QFH52AJ-104M	MM Cap.	0.01µF	100V	J
C1319		QET41CR-106	E Cap.	10µF	16V	M
C1321		QEK40JM-107M	〃	100µF	6.3V	〃
C1322		QCS11HJ-470	C Cap.	47pF	50V	J
C1323		QCS81HJ-470YLA	CH C Cap.	〃	〃	〃
C1324		〃 -470YLA	〃	〃	〃	〃
C1325		〃 -5R0YLA	〃	5pF	〃	〃
Transformer						
T1301	⚠	CE40665-00A	HV Block			
Coil						
L1301		A49468-101U	Peaking Coil	100µH		
L1302		〃 -562	〃	5.6mH		
L1303		〃 -562	〃	〃		
L1304		CE40620-00A	Width Coil			
Diode						
D1231		MA151WA	Chip Diode			
D1241		MA151WK	〃			

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
D1261		MA3047-L	Chip Diode	
D1262		MA4120(H)-Y	Zener Diode	
D1263		〃	〃	
D1264		〃	〃	
D1265		〃	〃	
D1266		〃	〃	
D1267		〃	〃	
D1301		MA151A	Chip Diode	
D1302		MA151K	〃	
D1303		MA157	〃	
Transistor				
Q1101		2SC2778 (B,C)	Chip Transistor	
Q1102		〃	〃	
Q1103		〃	〃	
Q1104		〃	〃	
Q1105		2SB709 (P-R)	〃	
Q1201		2SC2778 (B,C)	〃	
Q1231		2SB709 (P-R)	〃	
Q1261		2SB970 (Q-S)	〃	
Q1301		2SD601 (Q,R)	〃	
Q1302		2SD781	Si Transistor	
Q1303		2SD601A (Q,R)	Chip Transistor	
Q1304		2SB792 (Q-T)	〃	
Q1305		〃	〃	
Q1306		2SB792 (Q-T)	〃	
Q1307		2SB709 (P-R)	〃	
Q1308		2SB792 (Q-T)	〃	
Q1309		2SD601 (Q,R)	〃	
C1311		2SB709 (Q-R)	〃	
Q1312		2SD601 (Q,R)	〃	
I C				
IC1101		UPC4741G	I C	
IC1102		〃	〃	
IC1103		〃	〃	
IC1201		UPD4013BG	〃	
IC1202		TC4013BG	〃	
IC1261		UPC4558G	Mini Flat IC	
IC1301		NJM3414D	I C	
Miscellaneous				
		CH40324-008	EVF Con. Base	
SW1201		CEX40366-001	Switch	
SW1231		CEX40306-002	Push Switch	
SW1241		CEX40367-001	Slide Switch	
SW1261		CEX40306-002	Push Switch	
		CE40677-001	1/2 T Socket	
SW1301		CEX40306-002	Push Switch	
SW1302		〃 -002	〃	
CP1251		ICP-F25	IC Protecter	

1-2 DIFFERENCE BETWEEN CA-1071A AND CA-1073A

CA-1071A and CA-1073A are not interchangeable with each other.
The difference is shown below.

SYMBOL NO.	PART NO.		PART NAME
	CA-1071A		
R1231	QRS148J-102YL	————	CH MG R
R1232	QRS148J-272YL	————	CH MG R
R1233	QRS148J-153YL	————	CH MG R
D1231	MA151WA	————	Chip Diode
Q1231	2SB709(P-Q)	————	Chip Transistor
SW1231	CEX40306-002	————	Push Switch
SW1261	CEX40306-002	————	Push Switch

2. CA-A001A AUDIO BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Resistor						
RA001		QRSA08J-103YL	CH MG R	10kΩ	1/10W	J
RA002		〃 -101YL	〃	100Ω	〃	〃
RA003		〃 -273YL	〃	27kΩ	〃	〃
RA004		〃 -102YL	〃	1kΩ	〃	〃
RA005		〃 -102YL	〃	〃	〃	〃
RA006		〃 -102YL	〃	〃	〃	〃
RA007		〃 -222YL	〃	2.2kΩ	〃	〃
RA011		〃 -103YL	〃	10kΩ	〃	〃
RA012		〃 -101YL	〃	100Ω	〃	〃
RA013		〃 -273YL	〃	27kΩ	〃	〃
RA014		〃 -102YL	〃	1kΩ	〃	〃
RA015		〃 -102YL	〃	〃	〃	〃
RA016		〃 -102YL	〃	〃	〃	〃
RA017		〃 -222YL	〃	2.2kΩ	〃	〃
RA031		〃 -334YL	〃	330kΩ	〃	〃
RA032		〃 -124YL	〃	120kΩ	〃	〃
RA033		QRS148J-470YL	〃	47Ω	〃	〃
Capacitor						
CA002		CE40622-106YM	CH AL E Cap.	10μF	16V	M
CA003		QCF81HZ-473YLS	CH C Cap.	0.047μF	50V	Z
CA004		QCY81HK-332YLS	〃	3300pF	〃	K
CA005		CE40034-685WM	CH Tan. E Cap.	6.8μF	6.3V	M
CA006		CE40621-226YM	CH AL E Cap.	22μF	〃	〃
CA007		QER40JM-107M	E Cap.	100μF	〃	〃
CA008		〃 -107M	〃	〃	〃	〃
CA009		QCY81HK-473YLA	CH C Cap.	0.047μF	50V	K
CA012		CE40622-106YM	CH AL E Cap.	10μF	16V	M
CA013		QCF81HZ-473YLS	CH C Cap.	0.047μF	50V	Z
CA014		QCY81HK-332YLS	〃	3300pF	〃	K
CA015		CE40034-685WM	CH Tan. E Cap.	6.8μF	6.3V	M
CA016		CE40036-105XM	〃	1μF	35V	〃
CA017		QER40JM-226M	E Cap.	22μF	6.3V	〃
Diode						
DA001		MA151WA	Chip Diode			
DA002		1S2473H	Si Diode			
DA003		〃	〃			
Transistor						
QA001		2SC2778 (B,C)	Chip Transistor			
QA011		〃	〃			
I C						
ICA001		M51545P	I C	AUDIO AMP.		

3. CA-A002A AUDIO BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Resistor						
RA001		QRSA08J-103YL	CH MG R	10kΩ	1/10W	J
RA002		〃 -101YL	〃	100Ω	〃	〃
RA003		〃 -223YL	〃	22kΩ	〃	〃
RA004		〃 -102YL	〃	1kΩ	〃	〃
RA005		〃 -102YL	〃	〃	〃	〃
RA006		〃 -102YL	〃	〃	〃	〃
RA007		〃 -222YL	〃	2.2kΩ	〃	〃
RA031		〃 -334YL	〃	330kΩ	〃	〃
RA033		QRS148J-470YL	〃	47Ω	1/4W	〃
Capacitor						
CA002		CE40622-106YM	CH AL E Cap.	10μF	16V	M
CA003		QCF81HZ-473YLS	CH C Cap.	0.047μF	50V	Z
CA004		QCY81HK-103YLS	〃	0.01μF	〃	K
CA005		CE40034-685WM	CH Tan. E Cap.	6.8μF	6.3V	M
CA006		CE40621-226YM	CH AL E Cap.	22μF	〃	〃
CA008		QER40JM-107M	E Cap.	100μF	〃	〃
CA009		QCY81HK-473YLA	CH C Cap.	0.047μF	50V	K
CA016		CE40036-105XM	〃	1μF	35V	M
CA017		QER40JM-226M	E Cap.	22μF	6.3V	〃
Transistor						
QA001		2SC2778 (B,C)	Chip Transistor			
I C						
ICA001		M51545P	I C	AUDIO AMP.		

4. CA-B001A PREPROCESS BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
Variable Resistor				
RB012		CE40684-223YA	CH V R	22kΩ Y GAIN
Resistor				
RB001		QRS148J-102YL	CH MG R	1kΩ 1/4W J
RB002		〃 -102YL	〃	〃 〃 〃
RB003		〃 -272YL	〃	2.7kΩ 〃 〃
RB004		〃 -184YL	〃	180kΩ 〃 〃
RB005		〃 -104YL	〃	100kΩ 〃 〃
RB006		〃 -821YL	〃	820Ω 〃 〃
RB007		〃 -122YL	〃	1.2kΩ 〃 〃
RB008		〃 -222YL	〃	2.2kΩ 〃 〃
RB009		〃 -821YL	〃	820Ω 〃 〃
RB010		〃 -223YL	〃	22kΩ 〃 〃
RB011		〃 -471YL	〃	470Ω 〃 〃
RB014		〃 -332YL	〃	3.3kΩ 〃 〃
RB015		〃 -682YL	〃	6.8kΩ 〃 〃
RB016		〃 -101YL	〃	100Ω 〃 〃
RB017		〃 -100YL	〃	10Ω 〃 〃
Capacitor				
CB001		CE40034-685XM	CH Tan. E Cap.	6.8μF 6.3V M
CB002		QCF81HZ-473YLA	CH C Cap.	0.047μF 50V Z
CB003		CE40034-685XM	CH Tan. E Cap.	6.8μF 6.3V M
CB004		CE40036-105XM	〃	1μF 35V 〃
CB005		QCF81HZ-473YLA	CH C Cap.	0.047μF 50V Z
CB006		〃 -473YLA	〃	〃 〃 〃
CB007		〃 -473YLA	〃	〃 〃 〃
CB008		〃 -473YLA	〃	〃 〃 〃
CB009		〃 -473YLA	〃	〃 〃 〃
CB010		〃 -473YLA	〃	〃 〃 〃
CB011		〃 -473YLA	〃	〃 〃 〃
CB012		CE40713-475WM	CH Tan. E Cap.	4.7μF 10V M
CB013		〃 -475WM	〃	〃 〃 〃
Transformer				
TB001		CE40723-00A	4.1MHz Trap Transf.	
Transistor				
QB001		2SC2778 (B, C)	Chip Transistor	
QB002		〃	〃	
QB003		2SA1022 (B, C)	〃	
QB004		2SB709 (R-R)	〃	
I C				
ICB001		M51261P	I C	PRE-PROCESS
Miscellaneous				
DLB001		CE40659-00A	Delay Line	

5. CA-C001A CARRIER MATRIX BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Variable Resistor						
RC001		CE40684-222YA	CH V R	2.2kΩ	PHASE SET VR	
RC012		" -222YA	"	"	GROUP DELAY	
RC024		" -222YA	"	"	DC SET	
Resistor						
RC002		QRSA08J-561YL	CH MG R	560Ω	1/10W	J
RC003		QRS148J-182YL	"	1.8kΩ	1/4W	"
RC004		" -562YL	"	5.6kΩ	"	"
RC005		" -121YL	"	120Ω	"	"
RC006		" -182YL	"	1.8kΩ	"	"
RC007		" -821YL	"	820Ω	"	"
RC008		" -102YL	"	1kΩ	"	"
RC009		" -122YL	"	1.2kΩ	"	"
RC010		QRSA08J-183YL	"	18kΩ	1/10W	"
RC011		" -471YL	"	470Ω	"	"
RC013		" -271YL	"	270Ω	"	"
RC014		" -102YL	"	1kΩ	"	"
RC015		QRS148J-102YL	"	"	1/4W	"
RC016		" -680YL	"	68Ω	"	"
RC017		A74100-150	Thermistor	15Ω		
RC018		QRS148J-152YL	CH MG R	1.5kΩ	1/4W	J
RC019		" -331YL	"	330Ω	"	"
RC021		" -821YL	"	820Ω	"	"
RC022		" -821YL	"	"	"	"
RC023		" -562YL	"	5.6kΩ	"	"
RC025		QRD181J-392A	C R	3.9kΩ	1/8W	"
RC026		QRS148J-152YL	CH MG R	1.5kΩ	1/4W	"
RC027		QRD181J-682A	C R	6.8kΩ	1/8W	"
RC028		" -472A	" "	4.7kΩ	"	"
Capacitor						
CC001		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CC002		QCS81HJ-180YLS	"	18pF	"	J
CC004		QCF81HZ-473YLA	"	0.047μF	"	Z
CC005		QCS81HJ-560YLA	"	56pF	"	J
CC006		" -221YLA	"	220pF	"	"
CC008		QCF81HZ-473YLS	"	0.047μF	"	Z
CC009		" -103YLA	"	0.01μF	"	"
CC010		CE40713-475WM	CH Tan. E Cap.	4.7μF	10V	M
CC011		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CC012		QCS81HJ-7R0YLA	"	7pF	"	J
CC014		QCF81HZ-473YLA	"	0.047μF	"	Z
CC015		" -473YLA	"	"	"	"
Transformer						
TC001		CE40655-A0A	Phase Transf.	PHASE SET TRANSF.		
TC002		CE40653-00A	4.1 MHz BP Transf.			
TC003		CE40654-00A	8.2 MHz Transf.			

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
Diode				
DC001		KV-1236XY	Vari Cap Diode	
Transistor				
QC001		2SC2778 (B, C)	Chip Transistor	
QC002		〃	〃	
QC003		〃	〃	
QC004		〃	〃	
QC005		2SA1022 (B, C)	〃	
QC006		2SC2778 (B, C)	〃	
QC007		〃	〃	
QC008		〃	〃	
QC009		〃	〃	
I C				
ICC001		SN76670 (N)	I C	AMP, LIMITER & MULTI.

6. CA-D001A DETECTOR BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Variable Resistor						
RD024		CE40684-223YA	CH V R	22kΩ	R GAIN	
RD025		〃 -223YA	〃	〃	B GAIN	
Resistor						
RD001		QRS148J-103YL	CH MG R	10kΩ	1/4W	J
RD002		〃 -471YL	〃	470Ω	〃	〃
RD004		〃 -332YL	〃	3.3kΩ	〃	〃
RD005		〃 -103YL	〃	10kΩ	〃	〃
RD006		〃 -222YL	〃	2.2kΩ	〃	〃
RD007		〃 -822YL	〃	8.2kΩ	〃	〃
RD009		〃 -332YL	〃	3.3kΩ	〃	〃
RD010		〃 -332YL	〃	〃	〃	〃
RD011		〃 -152YL	〃	1.5kΩ	〃	〃
RD012		〃 -152YL	〃	〃	〃	〃
RD013		〃 -332YL	〃	3.3kΩ	〃	〃
RD014		〃 -332YL	〃	〃	〃	〃
RD015		〃 -332YL	〃	〃	〃	〃
RD016		〃 -332YL	〃	〃	〃	〃
RD017		〃 -822YL	〃	8.2kΩ	〃	〃
RD018		〃 -222YL	〃	2.2kΩ	〃	〃
RD019		〃 -122YL	〃	1.2kΩ	〃	〃
RD020		〃 -821YL	〃	820Ω	〃	〃
RD022		〃 -332YL	〃	3.3kΩ	〃	〃
RD023		〃 -103YL	〃	10kΩ	〃	〃
RD026		〃 -471YL	〃	470Ω	〃	〃
RD027		〃 -562YL	〃	5.6kΩ	〃	〃
RD028		〃 -332YL	〃	3.3kΩ	〃	〃
RD029		〃 -223YL	〃	22kΩ	〃	〃
RD030		〃 -471YL	〃	470Ω	〃	〃
RD031		〃 -103YL	〃	10kΩ	〃	〃
RD032		〃 -103YL	〃		〃	〃
RD033		〃 -332YL	〃	3.3kΩ	〃	〃
Capacitor						
CD001		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CD002		QCS81HJ-390YLA	〃	39pF	〃	J
CD003		QCF81HZ-103YLA	〃	0.01μF	〃	Z
CD004		QCS81HJ-101YLA	〃	100pF	〃	J
CD005		QCF81HZ-473YLA	〃	0.047μF	〃	Z
CD006		〃 -473YLA	〃	〃	〃	〃
CD007		QCS81HJ-5R0YLA	〃	5pF	〃	〃
CD008		〃 -5R0YLA	〃	〃	〃	〃
CD009		〃 -5R0YLA	〃	〃	〃	〃
CD010		〃 -5R0YLA	〃	〃	〃	〃
CD011		QCF81HZ-473YLA	〃	0.047μF	〃	Z
CD012		〃 -473YLA	〃	〃	〃	〃
CD013		〃 -473YLA	〃	〃	〃	〃
CD014		〃 -473YLA	〃	〃	〃	〃
CD015		QCS81HJ-390YLA	〃	39pF	〃	J
CD016		QCF81HZ-103YLA	〃	0.01μF	〃	Z
CD017		QCS81HJ-820YLA	〃	82pF	〃	J
CD018		CE40621-226YM	CH AL E Cap.	22μF	6.3V	M
CD019		〃 -226YM	〃	〃	〃	〃
CD020		QCS81HJ-181YLA	CH C Cap.	180pF	50V	J
CD021		〃 -181YLA	〃	〃	〃	〃
CD022		〃 -180YLA	〃	18pF	〃	〃

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
CD023		QCS81HJ-180YLA	CH C Cap.	18pF 50V J
CD024		QCY81HK-103YLA	〃	0.01μF 〃 K
CD025		〃 103YLA	〃	〃 〃 〃
Coil				
LD001		CE40344-330YL	Chip Inductor	33μH
LD002		〃 -330YL	〃	〃
LD003		〃 -820YL	〃	824H
LD004		〃 -820YL	〃	〃
Transistor				
QD001		2SC2778 (B,C)	Chip Transistor	
QD002		〃	〃	
QD003		2SB709 (P-R)	〃	
I C				
ICD001		HA11748B	I C	DETECTOR

7. CA-E001A BLACK SET/AUTO WHITE BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Variable Resistor						
RE001		CE40684-223YA	CH V R	22kΩ	A/W B OFFSET	
RE002		〃 -223YA	〃	〃	A/W R OFFSET	
RE003		〃 -223YA	〃	〃	B BLK SET	
RE004		〃 -223YA	〃	〃	R BLK SET	
RE005		〃 -105YA	〃	1MΩ	A/W B GAIN	
RE006		〃 -105YA	〃	〃	A/W R GAIN	
RE007		〃 -223YA	〃	22kΩ	YL BLK SET	
RE008		〃 -683YA	〃	68kΩ	YL-R	
Resistor						
RE009		QRSA08J-122YL	CH MG R	1.2kΩ	1/10W	J
RE010		-122YL	〃	〃	〃	〃
RE011		〃 -472YL	〃	4.7kΩ	〃	〃
RE012		〃 -562YL	〃	5.6kΩ	〃	〃
RE013		QRS148J-223YL	〃	22kΩ	1/4W	〃
RE014		〃 -333YL	〃	33kΩ	〃	〃
RE015		QRSA08J-471YL	〃	470Ω		
RE016		〃 -272YL	〃	2.7kΩ		
RE017		〃 -182YL	〃	1.8kΩ		
RE018		-222YL	〃	2.2kΩ		
RE021		QRS148J-472YL	〃	4.7kΩ	1/4W	〃
RE022		QRD181J-472A	C R	〃	1/8W	〃
RE023		QRS148J-472YL	CH MG R	〃	1/4W	〃
RE024		〃 -472YL	〃	〃	〃	〃
RE025		QRSA08J-154YL	〃	150kΩ	1/10W	〃
RE026		〃 -154YL	〃	〃	〃	〃
RE036		QRS148J-562YL	〃	5.6kΩ	1/4W	〃
RE037		QRD161J-154	C R	150kΩ	1/6W	〃
RE038		QRS148J-561YL	CH MG R	560Ω	1/4W	〃
RE039		QRD181J-683A	C R	68kΩ	1/5W	〃
RE040		〃 -273A	〃	27kΩ	〃	〃
Capacitor						
CE001		QCT81CH-680YLS	CH C Cap.	68pF	50V	J
CE002		〃 -181YLS	〃	180pF	〃	〃
CE003		〃 -680YLS	〃	68pF	〃	〃
CE004		QCF81HZ-473YLA	〃	0.047μF	〃	Z
CE005		〃 -473YLA	〃	〃	〃	〃
CE006		〃 -473YLA	〃	〃	〃	〃
CE007		〃 -473YLS	〃	〃	〃	〃
CE008		CE40034-685WM	CH Tan. E Cap.	6.8μF	6.3V	M
CE009		〃 -685XM	〃	〃	〃	〃
CE010		〃 -685XM	〃	〃	〃	〃
CE011		CE40035-225XM	〃	2.2μF	16V	〃
CE012		QCY81HK-822YLS	CH C Cap.	8200pF	50V	K
CE013		〃 -822YLS	〃	〃	〃	〃
CE014		CE40676-474YM	CH AL BP Cap.	0.47μF	〃	M
CE015		〃 -474YM	〃	〃	〃	〃
CE017		QCF81HZ-223YLS	CH C Cap.	0.022μF	〃	Z
Coil						
LE001		CE40344-331YL	Chip Inductor	330μH		
LE002		〃 -331YL	〃	〃		

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
Diode				
DE001		IS002	Log Diode	
DE002		〃	〃	
Transistor				
QE001		2SB709 (Q-R)	Chip Transistor	
I C				
ICE001		M51263P	IC	BLACK SET
ICE002		NJM082M	〃	FET OP. AMP
ICE003		UPC4558G	Mini Flat IC	OP. AMP
Miscellaneous		C41045-2	LED Spacer	

8. CA-E003A BLACK SET/AUTO WHITE BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Variable Resistor						
RE003		CE40684-223YA	CH V R	22kΩ	B BLK SET	
RE004		〃 -223YA	〃	〃	R BLK SET	
RE007		〃 -223YA	〃	〃	YL BLK SET	
RE008		〃 -683YA	〃	68kΩ	YL-R	
Resistor						
RE009		QRSA08J-122YL	CH MG R	1.2kΩ	1/10W	J
RE010		〃 -122YL	〃	〃	〃	〃
RE011		〃 -472YL	〃	4.7kΩ	〃	〃
RE012		〃 -562YL	〃	5.6kΩ	〃	〃
RE013		QRS148J-223YL	〃	22kΩ	1/4W	〃
RE014		〃 -333YL	〃	33kΩ	〃	〃
RE015		QRSA08J-471YL	〃	470Ω	1/10W	〃
RE016		〃 -272YL	〃	2.7kΩ	〃	〃
RE017		〃 -182YL	〃	1.8kΩ	〃	〃
RE018		〃 -222YL	〃	2.2kΩ	〃	〃
RE036		QRS148J-562YL	〃	5.6kΩ	1/4W	〃
RE037		QRD161J-154	C R	150kΩ	1/6W	〃
Capacitor						
CE001		QCT81CH-680YLS	CH C Cap.	68pF	50V	J
CE002		〃 -221YLS	〃	220pF	〃	〃
CE003		〃 -680YLS	〃	68pF	〃	〃
CE004		QCF81HZ-473YLA	〃	0.047μF	〃	Z
CE005		〃 -473YLA	〃	〃	〃	〃
CE006		〃 -473YLA	〃	〃	〃	〃
CE007		〃 -473YLS	〃	〃	〃	〃
CE008		CE40034-685WM	CH Tan. E Cap.	6.8μF	6.3V	M
CE009		〃 -685XM	〃	〃	〃	〃
CE010		〃 -685XM	〃	〃	〃	〃
CE011		CE40035-225XM	〃	2.2μF	16V	〃
CE016		QCS11HJ-390	C. Cap.	39pF	50V	J
CE017		QCF81HZ-223YLS	CH C Cap.	0.022μF	〃	Z
Coil						
LE001		CE40344-331YL	Chip Inductor	330μH		
LE002		〃 -331YL	〃	〃		
Transistor						
QE001		2SB709 (Q-R)	Chip Transistor			
I C						
ICE001		M51263P	IC	BLACK SET		

9. CA-F001A COLOR GAMMA BOARD

SYMBOL NO.		PART NO.	PART NAME	REMARKS		
Variable Resistor						
RF007		CE40684-223YA	CH V R	22kΩ	G IN GAIN	
RF014		〃 -102YA	〃	1kΩ	R-γ	
RF015		〃 -223YA	〃	22kΩ	R GAIN	
RF016		〃 -102YA	〃	1kΩ	B-γ	
RF018		〃 -223YA	〃	22kΩ	B GAIN	
Resistor						
RF001		QRSA08J-273YL	CH MG R	27kΩ	1/10W	J
RF002		QRS148J-393YL	〃	39kΩ	1/4W	〃
RF003		QRSA08J-333YL	〃	33kΩ	1/10W	〃
RF004		〃 -333YL	〃	〃	〃	〃
RF008		QRS148J-223YL	〃	22kΩ	1/4W	〃
RF009		QRSA08J-152YL	〃	1.5kΩ	1/10W	〃
RF010		〃 -561YL	〃	560Ω	〃	〃
RF019		QRS148J-473YL	〃	47kΩ	1/4W	〃
RF020		〃 -273YL	〃	27kΩ	〃	〃
RF021		〃 -394YL	〃	390kΩ	〃	〃
RF022		〃 -822YL	〃	8.2kΩ	〃	〃
RF023		〃 -682YL	〃	6.8kΩ	〃	〃
RF024		〃 -182YL	〃	1.8kΩ	〃	〃
RF025		〃 -332YL	〃	3.3kΩ	〃	〃
RF026		〃 -472YL	〃	4.7kΩ	〃	〃
RF027		〃 -182YL	〃	1.8kΩ	〃	〃
RF028		〃 -273YL	〃	27kΩ	〃	〃
RF029		QRSA08J-823YL	〃	82kΩ	1/10W	〃
RF030		QRS148J-822YL	〃	8.2kΩ	1/4W	〃
RF031		〃 -472YL	〃	4.7kΩ	〃	〃
RF032		QRSA08J-182YL	〃	1.8kΩ	1/10W	〃
RF033		〃 -272YL	〃	2.7kΩ	〃	〃
RF034		〃 -182YL	〃	1.8kΩ	〃	〃
Capacitor						
CF001		QCF81HZ-473YLS	CH C Cap.	0.047μF	50V	Z
CF002		〃 -473YLA	〃	〃	〃	〃
CF003		CE40036-105XM	CH Tan. E Cap.	1μF	35V	M
CF004		〃 -105XM	〃	〃	〃	〃
CF005		〃 -105XM	〃	〃	〃	〃
CF006		CE40621-226YM	CH AL E Cap.	22μF	6.3V	〃
Transistor						
QF001		2SC2778 (B,C)	Chip Transistor			
QF002		〃	〃			
QF003		〃	〃			
QF004		〃	〃			
I C						
ICF001		M51264P	I C			

10. CA-G001A CDP BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Variable Resistor						
RG002		CE40684-103YA	CH V R	10kΩ	R-Y GAIN	
RG014		〃 -102YA	〃	1kΩ	R ADD LEVEL	
RG022		〃 -103YA	〃	10kΩ	Y-B GAIN	
RG031		〃 -102YA	〃	1kΩ	B ADD LEVEL	
Resistor						
RG001		QRS148J-103YL	CH MG R	10kΩ	1/4W	J
RG003		〃 332YL	〃	3.3kΩ	〃	〃
RG004		〃 -182YL	〃	1.8kΩ	〃	〃
RG005		〃 -472YL	〃	4.7kΩ	〃	〃
RG006		〃 -822YL	〃	8.2kΩ	〃	〃
RG007		〃 -223YL	〃	22kΩ	〃	〃
RG009		QRSA08J-183YL	〃	18kΩ	1/10W	〃
RG010		QRS148J-103YL	〃	10kΩ	1/4W	〃
RG011		QRSA08J-223YL	〃	22kΩ	1/10W	〃
RG012		〃 -223YL	〃	〃	〃	〃
RG013		QRS148J-102YL	〃	1kΩ	1/4W	〃
RG015		QRSA08J-821YL	〃	820Ω	1/10W	〃
RG020		QRS148J-103YL	〃	10kΩ	1/4W	〃
RG021		〃 -103YL	〃	〃	〃	〃
RG023		〃 -332YL	〃	3.3kΩ	〃	〃
RG024		〃 -182YL	〃	1.8kΩ	〃	〃
RG025		〃 -472YL	〃	4.7kΩ	〃	〃
RG026		〃 -822YL	〃	8.2kΩ	〃	〃
RG027		〃 -223YL	〃	22kΩ	〃	〃
RG029		〃 -102YL	〃	1kΩ	〃	〃
RG032		QRSA08J-821YL	〃	820Ω	1/10W	〃
Capacitor						
CG001		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CG002		〃 -473YLA	〃	〃	〃	〃
CG003		〃 -473YLA	〃	〃	〃	〃
CG007		QCY81HK-102YLA	〃	1000pF	〃	K
CG008		QCF81HZ-103YLS	〃	0.01μF	〃	Z
CG009		〃 -103YLS	〃	〃	〃	〃
CG010		〃 -473YLA	〃	0.047μF	〃	〃
CG011		QCS81HJ-151YLA	〃	150pF	〃	J
CG012		-151YLA	〃	〃	〃	〃
CG013		CE40036-105WM	CH Tan. E Cap.	1μF	35V	M
CG015		〃 -105XM	〃	〃	〃	〃
CG016		CE40713-475WM	〃	4.7μF	10V	〃
CG020		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CG023		〃 -473YLA	〃	〃	〃	〃
CG024		QCY81HK-102YLA	〃	1000pF	〃	K
CG025		QCS81HJ-151YLA	〃	150pF	〃	J
CG026		〃 -151YLA	〃	〃	〃	〃
CG027		CE40036-105WM	CH Tan. E Cap	1μF	35V	M
CG029		〃 -105XM	〃	〃	〃	〃
CG031		CE40713-475WM	〃	4.7μF	10V	〃

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
Coil				
LG001		CE40344-331YL	Chip Inductor	330μH
LG002		〃 -331YL	〃	
Transistor				
QG001		2SC2778 (B,C)	Chip Transistor	
QG002		〃	〃	
QG003		〃	〃	
QG004		〃	〃	
I C				
ICG001		MN8029S	I C	1H DELAY (CCD)
ICG002		〃	〃	〃
ICG003		BA7020F	〃	

11. CA-H001A AGC BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Variable Resistor						
RH012		CE40684-223YA	CH V R	22kΩ	BURST LEVEL	
RH026		〃 -103YA	〃	10kΩ	Y KNEE	
RH043		〃 -223YA	〃	22kΩ	CHROMA LIMITER	
Resistor						
RH001		QRS148J-102YL	CH MG R	1kΩ	1/4W	J
RH002		〃 -182YL	〃	1.8kΩ	〃	〃
RH003		〃 -222YL	〃	2.2kΩ	〃	〃
RH004		QRSA08J-223YL	〃	22kΩ	1/10W	〃
RH005		〃 -223YL	〃	〃	〃	〃
RH006		QRS148J-333YL	〃	33kΩ	1/4W	〃
RH007		QRSA08J-684YL	〃	680kΩ	1/10W	〃
RH008		〃 -474YL	〃	470kΩ	〃	〃
RH009		QRS148J-564YL	〃	560kΩ	1/4W	〃
RH021		〃 -182YL	〃	1.8kΩ	〃	〃
RH022		〃 -392YL	〃	3.9kΩ	〃	〃
RH023		QRSA08J-104YL	〃	100kΩ	1/10W	〃
RH025		QRS148J-103YL	〃	10kΩ	1/4W	〃
RH027		〃 -122YL	〃	1.2kΩ	〃	〃
RH028		〃 -561YL	〃	560Ω	〃	〃
RH029		QRSA08J-681YL	〃	680Ω	1/10W	〃
RH031		QRS148J-103YL	〃	10kΩ	1/4W	〃
RH032		〃 -103YL	〃	〃	〃	〃
RH033		〃 -103YL	〃	〃	〃	〃
RH034		〃 -333YL	〃	22kΩ	〃	〃
RH035		QRSA08J-103YL	〃	10kΩ	1/10W	〃
RH036		〃 -103YL	〃	〃	〃	〃
RH037		QRS148J-563YL	〃	56kΩ	1/4W	〃
RH038		〃 -474YL	〃	470kΩ	〃	〃
RH039		〃 -223YL	〃	22kΩ	〃	〃
RH041		〃 -822YL	〃	8.2kΩ	〃	〃
RH042		〃 -103YL	〃	10kΩ	〃	〃
RH044		〃 -332YL	〃	3.3kΩ	〃	〃
RH045		〃 -103YL	〃	10kΩ	〃	〃
RH051		〃 -101YL	〃	100Ω	〃	〃
Capacitor						
CH003		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CH004		CE40622-106YM	CH AL E Cap.	10μF	16V	M
CH005		QCS81HJ-151YL	CH C Cap.	150pF	50V	J
CH006		〃 -121YL	〃	120pF	〃	〃
CH007		CE40622-106YM	CH AL E Cap.	10μF	16V	M
CH008		〃 -106YM	〃	〃	〃	〃
CH009		CE40623-474YM	〃	0.47μF	50V	〃
CH010		CE40622-106YM	CH AL E Cap.	10μF	16V	〃
CH011		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CH013		〃 -473YLS	〃	〃	〃	M
CH014		CE40034-685XM	CH Tan. E Cap.	6.8μF	6.3V	〃
Coil						
LH001		CE40344-151YL	Chip Inductor	150μH		

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
Diode				
DH001		MA151A	Chip Diode	
DH002		〃	〃	
DH003		〃	〃	
Transistor				
QH001		2SC2778 (B,C)	Chip Transistor	
QH002		2SB709 (P-R)	〃	
QH003		2SC2778 (B,C)	〃	
QH004		〃	〃	
QH005		〃	〃	
QH006		2SB709 (P-R)	〃	
QH007		2SC2778(B, C)	〃	
QH008		〃	〃	
QH009		〃	〃	
I C				
ICH001		M51262P	I C	AGC
Miscellaneous				
DLH001		CE40657-A0A	Delay Line	

12. CA-J001A ENC. BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Variable Resistor						
RJ004		CE40684-222YA	CH V R	2.2kΩ	Y SET UP	
RJ006		〃 -103YA	〃	10kΩ	R-Y CARRIER BAL.	
RJ008		〃 -103YA	〃	〃	Y-B CARRIER BAL.	
RJ019		〃 -332YA	〃	3.3kΩ	SC PHASE	
Resistor						
RJ001		QRS148J-102YL	CH MG R	1kΩ	1/4W	J
RJ002		〃 -102YL	〃	〃	〃	〃
RJ003		〃 -222YL	〃	2.2kΩ	〃	〃
RJ005		〃 -472YL	〃	4.7kΩ	〃	〃
RJ007		〃 -472YL	〃	〃	〃	〃
RJ009		〃 -472YL	〃	〃	〃	〃
RJ010		〃 -123YL	〃	12kΩ	〃	〃
RJ012		〃 -153YL	〃	15kΩ	〃	〃
RJ013		〃 -272YL	〃	2.7kΩ	〃	〃
RJ014		〃 -153YL	〃	15kΩ	〃	〃
RJ015		〃 -822YL	〃	8.2kΩ	〃	〃
RJ016		〃 -122YL	〃	1.2kΩ	〃	〃
RJ017		〃 -153YL	〃	15kΩ	〃	〃
RJ018		〃 -153YL	〃	〃	〃	〃
RJ020		〃 -222YL	〃	2.2kΩ	〃	〃
RJ021		〃 -223YL	〃	22kΩ	〃	〃
RJ022		〃 -472YL	〃	4.7kΩ	〃	〃
Capacitor						
CJ001		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CJ002		〃 -473YLA	〃	〃	〃	〃
CJ003		〃 -473YLA	〃	〃	〃	〃
CJ004		QCS81HJ-100YLA	〃	10pF	〃	J
CJ005		QCF81HZ-473YLA	〃	0.047μF	〃	Z
CJ006		QCS81HJ-270YLA	〃	27pF	〃	J
CJ007		QCF81HZ-473YLA	〃	0.047μF	〃	Z
CJ008		QCS81HJ-390YLA	〃	39pF	〃	J
CJ009		CE40622-106YM	CH AL E Cap.	10μF	〃	M
CJ010		QCF81HZ-473YLA	CH C Cap.	0.047μF	〃	Z
CJ012		〃 -473YLA	〃	〃	〃	〃
CJ013		QCS81HJ-220YLA	〃	22pF	〃	J
CJ014		QCF81HZ-473YLA	〃	0.047μF	〃	Z
CJ015		CE40622-106YM	CH AL E Cap.	10μF	16V	M
CJ016		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CJ017		QCS81HJ-270YLA	〃	27pF	〃	J
CJ018		〃 -270YLA	〃	〃	〃	〃
Coil						
LJ001		CE40344-101YL	Chip Inductor	100μH		
Diode						
DJ001		MA151A	Chip Diode			
Transistor						
QJ001		2SC2778 (B,C)	Chip Transistor			
QJ002		2SB709 (P-R)	〃			

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
QJ003		2SC2778 (B, C)	Chip Transistor	
QJ004		〃	〃	
I C				
ICJ001		HA11720MP	I C	ENCODER

13. CA-K001A SSG BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Resistor						
RK001		QRSA08J-152YL	CH MG R	1.5kΩ	1/10W	J
RK002		〃 -561YL	〃	560Ω	〃	〃
RK003		〃 -472YL	〃	4.7kΩ	〃	〃
RK004		QRS148J-104YL	〃	100kΩ	1/4W	〃
RK005		QRSA08J-684YL	〃	680kΩ	1/10W	〃
RK006		〃 -103YL	〃	10kΩ	〃	〃
RK007		〃 -103YL	〃	〃	〃	〃
RK008		〃 -472YL	〃	4.7kΩ	〃	〃
RK009		〃 -272YL	〃	2.7kΩ	〃	〃
RK010		〃 -273YL	〃	27kΩ	〃	〃
RK011		〃 -272YL	〃	2.7kΩ	〃	〃
RK012		〃 -273YL	〃	27kΩ	〃	〃
RK013		〃 -684YL	〃	680kΩ	〃	〃
Capacitor						
CK001		CE40622-106YM	CH AL BP Cap.	10μF	16V	M
CK002		〃 -106YM	〃	〃	〃	〃
CK003		QCS81HJ-101YLS	CH C Cap.	100pF	50V	J
CK005		QCF81HZ-223YLS	〃	0.022μF	〃	Z
CK006		QCT81CH-390YLS	〃	39pF	〃	J
CK007		CE40676-474YM	CH AL E Cap.	0.47μF	〃	M
CK008		QCT81CH-100YLS	CH C Cap.	10pF	〃	J
CK009		〃 -100YLS	〃	〃	〃	〃
CK010		〃 -4R0YLS	〃	4pF	〃	〃
CK011		QAT3110-7R0A	Trimmer Cap.	7pF		
CK012		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
CK013		QCS81HJ-101YLS	〃	00pF	〃	J
CK014		〃 -331YLS	〃	330pF	〃	〃
CK015		〃 -101YLS	〃	100pF	〃	〃
CK016		〃 -270YLS	〃	27pF	〃	〃
CK017		〃 -101YLS	〃	100pF	〃	〃
CK018		〃 -331YLS	〃	330pF	〃	〃
CK019		〃 -101YLS	〃	100pF	〃	〃
CK020		〃 -270YLS	〃	27pF	〃	〃
CK021		〃 -101YLS	〃	100pF	〃	〃
CK022		QCF81HZ-473YLA	〃	0.047μF	〃	〃
CK023		〃 -103YLS	〃	0.01μF	〃	〃
CK024		QCS11HJ-181	C Cap.	180pF	〃	〃
Transformer						
TK001		CE40658-00A	OSC Transf.	fH OSC		
Coil						
LK001		CE40344-101YL	Chip Inductor	100μH		
Diode						
DK001		1SV68	Vari Cap Diode			
Transistor						
QK001		2SC2778 (B,C)	Chip Transistor			

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
I C				
ICK001		HD61907	IC	SSG
Miscellaneous				
		CM42423-001	SSG Shield (B)	
		CM42424-001	SSG Shield (T)	
		CM42497-00A	Insulator	
XK001		CE40673-00B	14MHz Crystal	
	⚠	CM42585-A01	SSG Insulator (B)	

14. CA-L001A VTR TRIG. & BATT. ALARM

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Variable Resistor						
RL012		CE40684-682YA	CH V R	6.8kΩ	BATT. ALARM SET	
Resistor						
RL001		QRS148J-124YL	CH MG R	120kΩ	1/4W	J
RL002		〃 -471YL	〃	470Ω	〃	〃
RL003		〃 -222YL	〃	2.2kΩ	〃	〃
RL004		〃 -563YL	〃	56kΩ	〃	〃
RL011		〃 -823YL	〃	82kΩ	〃	〃
RL013		〃 -822YL	〃	8.2kΩ	〃	〃
RL021		〃 -271YL	〃	270Ω	〃	〃
RL022		〃 -271YL	〃	〃	〃	〃
RL023		〃 -680YL	〃	68Ω	〃	〃
Capacitor						
CL001		CE40622-106YM	CH AL E Cap.	10μF	16V	M
CL011		CE40713-475XM	〃	4.7μF	10V	〃
CL012		QCY81HK-473YLA	〃	0.047μF	50V	K
CL021		CE40713-475WM	CH Tan. E Cap.	4.7μF	10V	M
CL041		QER41AM-476M	E Cap.	47μF	〃	〃
Diode						
DL001		1S2473H	Si Diode			
DL041		W06A	〃			
Transistor						
QL001		2SC2778 (B, C)	Chip Transistor			
QL011		2SD1030 (R)	〃			
QL012		2SC2778 (C, D)	〃			
I C						
ICL001		M5232L	I C	BATTERY ALARM		
Miscellaneous						
		CH40323-010	Camera Con. Base			
		A44594-002	Fuse Clip	x 2		
FL001	⚠	QMF51U1-1R25S	Fuse	1.25A		

15. CA-M001A MIC BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
Resistor				
RM001		QRS148J-560YL	CH MG R	56Ω 1/4W J
RM002		〃 -560YL	〃	〃 〃 〃
RM003		〃 -682YL	〃	6.8kΩ 〃 〃
RM004		〃 -682YL	〃	〃 〃 〃
RM005		〃 -103YL	〃	10kΩ 〃 〃
RM006		〃 -103YL	〃	〃 〃 〃
Capacitor				
CM001		CE40036-105WM	CH Tan. E Cap.	1μF 35V M
CM002		〃 -105WM	〃	〃 〃 〃
CM003		〃 -105WM	〃	〃 〃 〃
CM004		〃 -105WM	〃	〃 〃 〃
Transistor				
QM001		2SB709 (P-R)	Chip Transistor	
QM002		〃	〃	
Miscellaneous				
JM001		PU55585	Mic Jack	
SWM001		CEX40366-001	Switch	STEREO/MONO SELECT

16. CA-M002A MIC BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
Resistor				
RM001		QRS148J-560YL	CH MG R	56Ω 1/4W J
RM003		〃 -682YL	〃	6.8kΩ 〃 〃
RM005		〃 -103YL	〃	10kΩ 〃 〃
RM007		〃 -223YL	〃	22kΩ 〃 〃
Capacitor				
CM001		CE40036-105XM	CH Tan. E Cap.	1μF 35V M
CM003		〃 -105XM	〃	〃 〃 〃
Transistor				
QM001		2SB709 (P-R)	Chip Transistor	
Miscellaneous				
JM001		PU55585	Mic Jack	

17. CA-2071A PREAMP BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Resistor						
R2001		QRD142J-225S	C R	2.2MΩ	1/4W	J
R2002		〃 -824S	〃	820kΩ	〃	〃
R2003		QRS148J-151YL	CH MG R	150Ω	〃	〃
R2004		〃 -471YL	〃	470Ω	〃	〃
R2005		〃 -152YL	〃	1.5kΩ	〃	〃
R2006		〃 -152YL	〃	〃	〃	〃
R2007		〃 -102YL	〃	1kΩ	〃	〃
R2008		〃 -332YL	〃	3.3kΩ	〃	〃
R2009		〃 -473YL	〃	47kΩ	〃	〃
R2010		〃 -332YL	〃	3.3kΩ	〃	〃
R2011		〃 -183YL	〃	18kΩ	〃	〃
R2012		〃 -184YL	〃	180kΩ	〃	〃
R2013		〃 -273YL	〃	27kΩ	〃	〃
R2014		〃 -101YL	〃	100Ω	〃	〃
R2015		〃 -222YL	〃	2.2kΩ	〃	〃
R2016		〃 -822YL	〃	8.2kΩ	〃	〃
R2017		〃 -564YL	〃	560kΩ	〃	〃
R2018		〃 -333YL	〃	33kΩ	〃	〃
R2019		〃 -470YL	〃	47Ω	〃	〃
R2020		〃 -470YL	〃	〃	〃	〃
R2021		〃 -562YL	〃	5.6kΩ	〃	〃
Capacitor						
C2001		A76268-473	MP Cap.	0.047μF		
C2002		CE40034-336XM	CH Tan. E Cap.	33μF	6.3V	M
C2003		〃 -336XM	〃	〃	〃	〃
C2004		〃 -336WM	〃	〃	〃	〃
C2005		QCY81HK-473YLA	CH C Cap.	0.047μF	50V	K
C2006		CE40713-475WM	CH Tan. E Cap.	4.7μF	10V	M
C2007		CE40036-474WM	〃	0.47μF	35V	〃
C2008		CE40035-106WM	〃	10μF	16V	〃
C2009		QCF81HZ-473YLA	CH C Cap.	0.047μF	50V	Z
C2010		QCS81HJ-3ROYLA	〃	3pF	〃	J
C2011		CE40345-200YX	CH Trimmer Cap.	20pF		
C2012		QCY81HK-473YLA	CH C Cap.	0.047μF	〃	K
Coil						
L2001		CJ39609-00A	Percival Coil			
L2002		CE40344-101YL	Chip Inductor	100μH		
Transistor						
Q2001		2SK316 (Q)	F E T			
Q2002		2SA1022 (C)	Chip Transistor			
Q2003		2SC2404 (D)	〃			
Q2004		〃	〃			
Q2005		2SC2778 (C)	〃			
Q2006		2SB709 (P-R)	〃			
Miscellaneous		CM31200-001	Shield Cover			
		CM31201-00A	Shield Case			
		CM42485-001	P. Arm Insulator			

18. CA-6071A EVF BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS		
Variable Resistor						
R6834		CE40624-105A	V R	1MΩ		
R6837		〃 -222A	〃	2.2kΩ		
R6841		〃 -472A	〃	4.7kΩ		
R6842		A76225-205A		2MΩ		
Resistor						
R6802		QRS148J-102YL	CH MG R	1kΩ	1/4W	J
R6803		〃 -102YL	〃	〃	〃	〃
R6805		〃 -102YL	〃	〃	〃	〃
R6806		〃 -562YL	〃	5.6kΩ	〃	〃
R6807		〃 -222YL	〃	2.2kΩ	〃	〃
R6808		〃 -683YL	〃	68kΩ	〃	〃
R6809		〃 -102YL	〃	1kΩ	〃	〃
R6812		〃 -562YL	〃	5.6kΩ	〃	〃
R6813		〃 -100YL	〃	10Ω	〃	〃
R6814		〃 -223YL	〃	22kΩ	〃	〃
R6815		〃 -683YL	〃	68kΩ	〃	〃
R6816		〃 -102YL	〃	1kΩ	〃	〃
R6817		〃 -102YL	〃	1kΩ	〃	〃
R6818		〃 -102YL	〃	〃	〃	〃
R6831		〃 -332YL	〃	3.3kΩ	〃	〃
R6832		〃 -332YL	〃	〃	〃	〃
R6833		〃 -333YL	〃	33kΩ	〃	〃
R6835		〃 -105YL	〃	1MΩ	〃	〃
R6836		〃 -684YL	〃	680kΩ	〃	〃
R6838		〃 -4R7YL	〃	4.7Ω	〃	〃
R6840		〃 -222YL	〃	2.2kΩ	〃	〃
R6843		CJ39619-00B	R Block			
Capacitor						
C6801		QER40JM-107M	E Cap.	100μF	6.3V	M
C6802		QEPA1HM-105M	〃	1μF	50V	〃
C6803		QCY81HK-152YLA	CH C Cap.	1500pF	〃	K
C6804		QER41EM-475M	E Cap.	4.7μF	25V	M
C6805		QCY81HK-223YLA	CH C Cap.	0.022μF	50V	K
C6806		QCS81HJ-121YLA	〃	120pF	〃	J
C6807		QER40JM-226M	E Cap.	22μF	6.3V	M
C6808		〃 -476M	〃	47μF	〃	〃
C6809		〃 -476M	〃	〃	〃	〃
C6811		QEE51VK-684M	Tan. Cap.	0.68μF	35V	K
C6812		QER40JM-476M	E Cap.	47μF	6.3V	M
C6831		QEU41AM-227M	〃	220μF	10V	〃
C6832		QCS81HJ-221YLA	CH C Cap.	220pF	50V	J
C6833		QCY81HK-473YLA	〃	0.047μF	〃	K
C6834		QETA2AM-106	E Cap.	10μF	100V	M
C6835		QEU41AM-227M	〃	220μF	10V	〃
C6836		〃 -227M	〃	〃	〃	〃
C6837		CE40036-105WM	CH Tan. E Cap.	1μF	35V	〃
C6838		QETA2AM-106	E Cap.	10μF	63V	〃
C6839		QFP32DG-103S	PP Cap.	0.01μF	200V	G
C6840		QCS81HJ-330YLA	CH C Cap.	33pF	50V	J
C6841		QCY32HK-152A	C Cap.	1500pF	500V	K
Transformer						
T6831		CE40681-00A	HV Block			

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
Coil				
L6831		A49468-101U	Peaking Coil	100μH
L6832	⚠	CE40680-00A	H Lin Coil	
Diode				
D6801		MA151K	Chip Diode	
D6802		GL-1NG201	L E D	
D6803		GL-1HD201	〃	
D6804		GL-1HY201	〃	
D6831		MA151A	Chip Diode	
Transistor				
Q6802		2SB709 (P-R)	Chip Transistor	
Q6831		2SB788 (T)	Transistor	
Q6832		2SD975	〃	
I C				
IC6801		AN2510S	I C	VIDEO AMP, SYNC SEP VH AMP & DRIVE
Miscellaneous				
		CE40678-00A	Socket Ass'y	

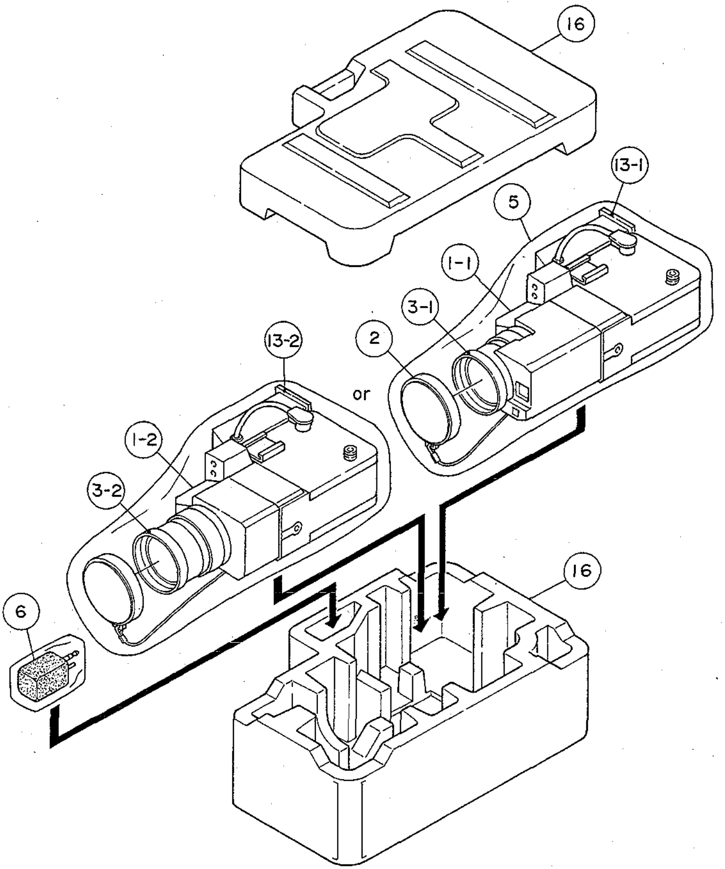
19. CA-8071A BIAS LIGHT BOARD

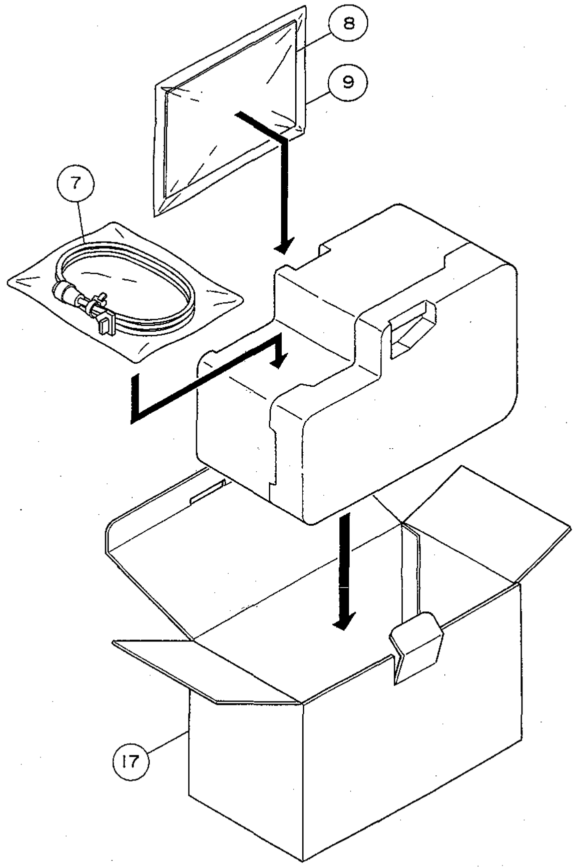
SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
Capacitor				
C8001		QCF81HZ-473YLA	CH C Cap.	0.047μF 50V Z
C8002		〃 -473YLA	〃	〃 〃 〃
Miscellaneous				
PL8001		CE40683-001	Pilot Lamp	
PL8002		〃 -001	〃	

20. CA-9071A VTR SW BOARD

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
		CEX40365-001	Switch	

PACKING





PACKING PARTS LIST

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
1		————	Camera Body	GX-N7U/UT, GX-N4U/UT
2		CM42571-00A	Lens Cap Ass'y	
5		CP30004-021	Poly Bag	For the main body
6		QPGA005-00703	Poly Bag	For the microphone
7		VC-444-2E	Camera Cable	
8		GX-N7U-IB-A	Inst. Book	GX-N7U only
"		GX-N7UT-IB-A	Inst. Book	GX-N7UT only
"		GX-N4U-IB-A	Inst. Book	GX-N4U only
"		GX-N4UT-IB-A	Inst. Book	GX-N4UT only
9		CM30751-010	Poly Bag	
13		————	EVF	N7U-EVF
16		CP10293-00A	Cushion Ass'y	
17		CP20065-023	Packing Case	GX-N7U only
"		CP20065-038	Packing Case	GX-N7UT only
"		CP20065-027	Packing Case	GX-N4U only
"		CP20065-037	Packing Case	GX-N4UT only

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8405 Nissho
S.O.

GX-N7U/UT
GX-N4U/UT

STANDARD CIRCUIT DIAGRAM

CONTENTS

1. NOTES ON USING CIRCUIT DIAGRAMS 2
2. PIN ARRANGEMENTS OF ICs, TRANSISTORS AND DIODES 3
3. WIRING DIAGRAM 5
4. BLOCK DIAGRAM OF EVF 7
5. BLOCK DIAGRAM OF LENS (GX-N7U/UT) 8
6. BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N7U/UT) 9

7-1. CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N7U/UT)(CA-1071A) 11
7-2. BOARD DIAGRAM OF MOTHER BOARD (CA-1071A) 13
8-1. CIRCUIT DIAGRAM OF PRE-AMP (CA-2071A) 15
8-2. BOARD DIAGRAM OF PRE-AMP (CA-2071A) 15
9-1. CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ (CA-A001A) 16
9-2. BOARD DIAGRAM OF AUDIO BOARD Ⓐ (CA-A001A) 16
10-1. CIRCUIT DIAGRAM OF PRE-PROCESS BOARD Ⓑ (CA-B001A) 17
10-2. BOARD DIAGRAM OF PRE-PROCESS BOARD Ⓑ (CA-B001A) 17
11-1. CIRCUIT DIAGRAM OF CARRIER MATRIX BOARD Ⓒ (CA-C001A) 18
11-2. BOARD DIAGRAM OF CARRIER MATRIX BOARD Ⓒ (CA-C001A) 18
12-1. CIRCUIT DIAGRAM OF DETECTOR BOARD Ⓓ (CA-D001A) 19
12-2. BOARD DIAGRAM OF DETECTOR BOARD Ⓓ (CA-D001A) 19
13-1. CIRCUIT DIAGRAM OF BLACK SET/AUTO WHITE BOARD E (CA-E001A) 20
13-2. BOARD DIAGRAM OF BLACK SET/AUTO WHITE BOARD E (CA-E001A) 20
14-1. CIRCUIT DIAGRAM OF COLOR γ BOARD Ⓕ (CA-F001A) 21
14-2. BOARD DIAGRAM OF COLOR γ BOARD Ⓕ (CA-F001A) 21
15-1. CIRCUIT DIAGRAM OF CDP BOARD Ⓖ (CA-G001A) 22
15-2. BOARD DIAGRAM OF CDP BOARD Ⓖ (CA-G001A) 22
16-1. CIRCUIT DIAGRAM OF AGC BOARD Ⓗ (CA-H001A) 23
16-2. BOARD DIAGRAM OF AGC BOARD Ⓗ (CA-H001A) 23
17-1. CIRCUIT DIAGRAM OF ENCODER BOARD Ⓙ (CA-J001A) 24
17-2. BOARD DIAGRAM OF ENCODER BOARD Ⓙ (CA-J001A) 24
18-1. CIRCUIT DIAGRAM OF SSG BOARD Ⓚ (CA-K001A) 25
18-2. BOARD DIAGRAM OF SSG BOARD Ⓚ (CA-K001A) 25
19-1. CIECUIT DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ (CA-L001A) 26
19-2. BOARD DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ (CA-L001A) 26
20. CIRCUIT DIAGRAM OF SW. REGULATOR (CE40687-00A) 27
21. BOARD DIAGRAM OF MIC BOARD (CA-M001A) 28
22. BOARD DIAGRAM OF TUBE SOCKET BOARD 28
23. BOARD DIAGRAM OF BIAS LIGHT BOARD (CA-8071A) 28
24-1. CIRCUIT DIAGRAM OF EVF (CA-6071A) 29
24-2. BOARD DIAGRAM OF EVF (CA-6071A) 30
25. CIRCUIT DIAGRAM OF GX-N4U/UT 31
26. BOARD DIAGRAM OF MIC BOARD (CA-M002A) 32
27. BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N4U/UT) 33
28-1. CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N4U/UT) (CA-1073A) 35
28-2. BOARD DIAGRAM OF MOTHER BOARD (CA-1073A) 37
29-1. CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ (CA-A002A) 39
29-2. BOARD DIAGRAM OF AUDIO BOARD Ⓐ (CA-A002A) 39
30-1. CIRCUIT DIAGRAM OF BLACK SET BOARD Ⓔ (CA-E003A) 40
30-2. BOARD DIAGRAM OF BLACK SET BOARD Ⓔ (CA-E003A) 40

GX-N7U/UT : No. 5506
GX-N4U/UT : No. 5519
May. 1984

1 NOTES ON USING THIS CIRCUIT DIAGRAMS

1. Since the circuit diagram is a standard one, the circuit and circuit constants may be object to change for improvement without any notice.
2. Replacing the shaded (▨) parts in the circuit diagram, be sure to use parts specified to safety purposes.
3. The voltage values and waveforms have been measured under the following conditions:
   - Illumination : Illumination condition during adjustment
   - Object : JVC Gray scale pattern ($\gamma = 2.2$, 11 steps)
   - Iris : Iris switch ~ Auto iris (AGC ON) " Ⓐ ", iris compensation switch ~ "O" position
   - VTR mode indication : Pause mode
   - White balance : Indoor setting
   - Voltage values : All DC voltage values. Measured by a high-precision tester or digital voltmeter.
   - Waveforms : Oscilloscope sweep time H: 10 μS/div. V: 5 mS/div. Others: Measured time is shown. Usually a probe of 10 : 1 is used. (Indicated when a 1 : 1 probe is used.)

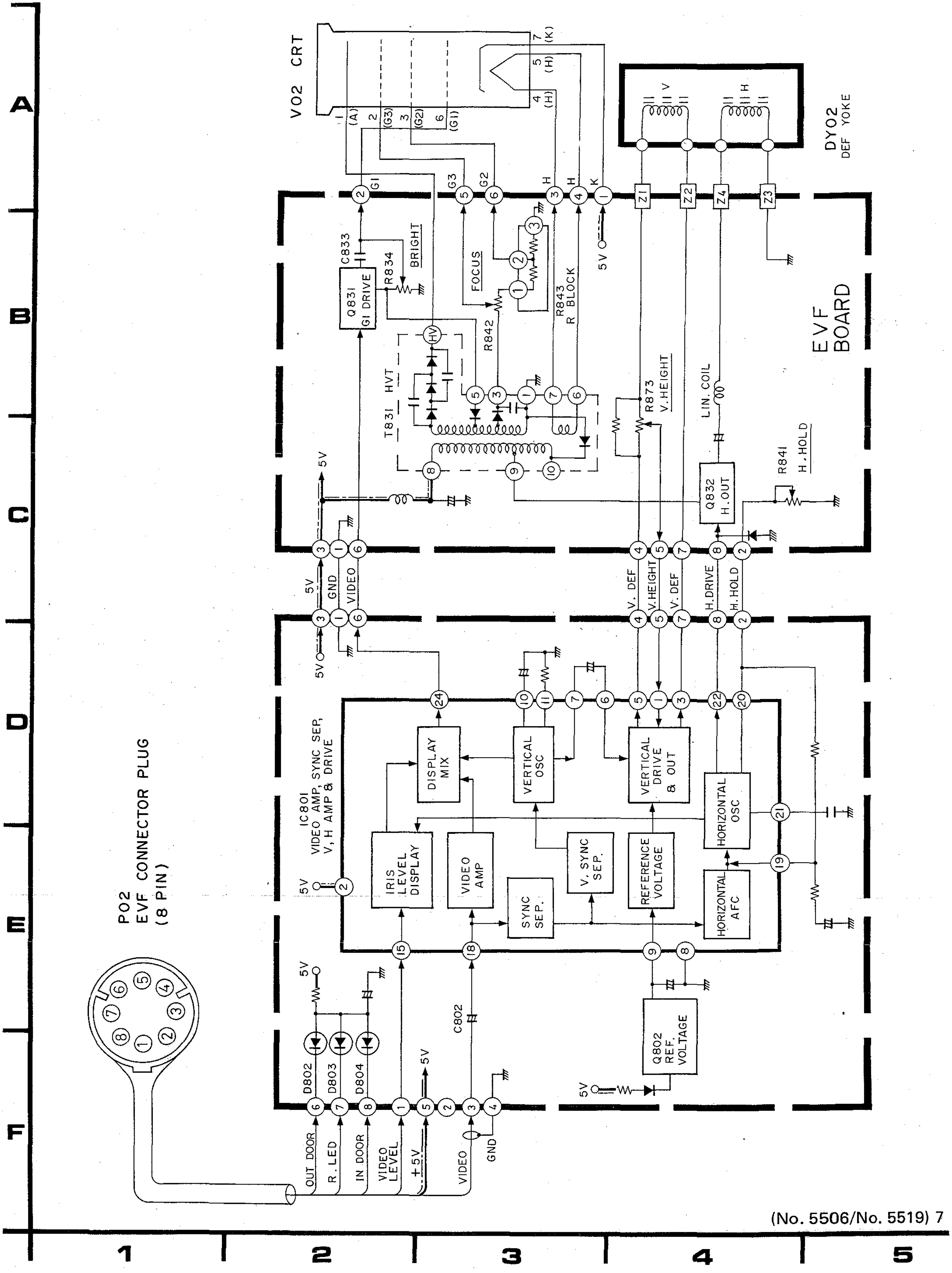
   * **Note:** See also the information given in the circuit diagram.
4. Indications on the circuit diagram.
   - Resistors
     10K: Resistance value
     non-unit: [Ω]
     K: [KΩ]
     M: [MΩ]
     1/2W: Rated allowable power [W]
     non-indication: 1/4 chip resistor or carbon resistor
   - Electrolytic Capacitors
     47/16: Capacitance value [μF] working voltage [V]
     NP/BP: Non-polar/bipolar electrolytic capacitor
     T or TAN: Tantalum capacitor
   - Capacitors
     0.033: Capacitance value
     1 or higher: [pF], less than 1 : [μF]
     100V: working voltage
     All DC voltage except for AC indicated.
     non-indication: 50V DC
     MY: Mylar capacitor
     PP: Polypropylene capacitor
     non-indication: Ceramic capacitor
   - Coils
     39 : Inductance value
     non-unit: [μH]
   - Connections
     ▭ : Connector
     △ or –≫– : Chip connector
     o : Soldering

   * Refer to the parts list in the Service manual about the detailed indications of parts.
5. The non-indicated chip transistor and chip diode on the Circuit Diagrams are as follows.
   - PNP type : 2SB709 (Q, R)
   - NPN type : 2SC2778 (C, D)
   - Diode : MA151WA

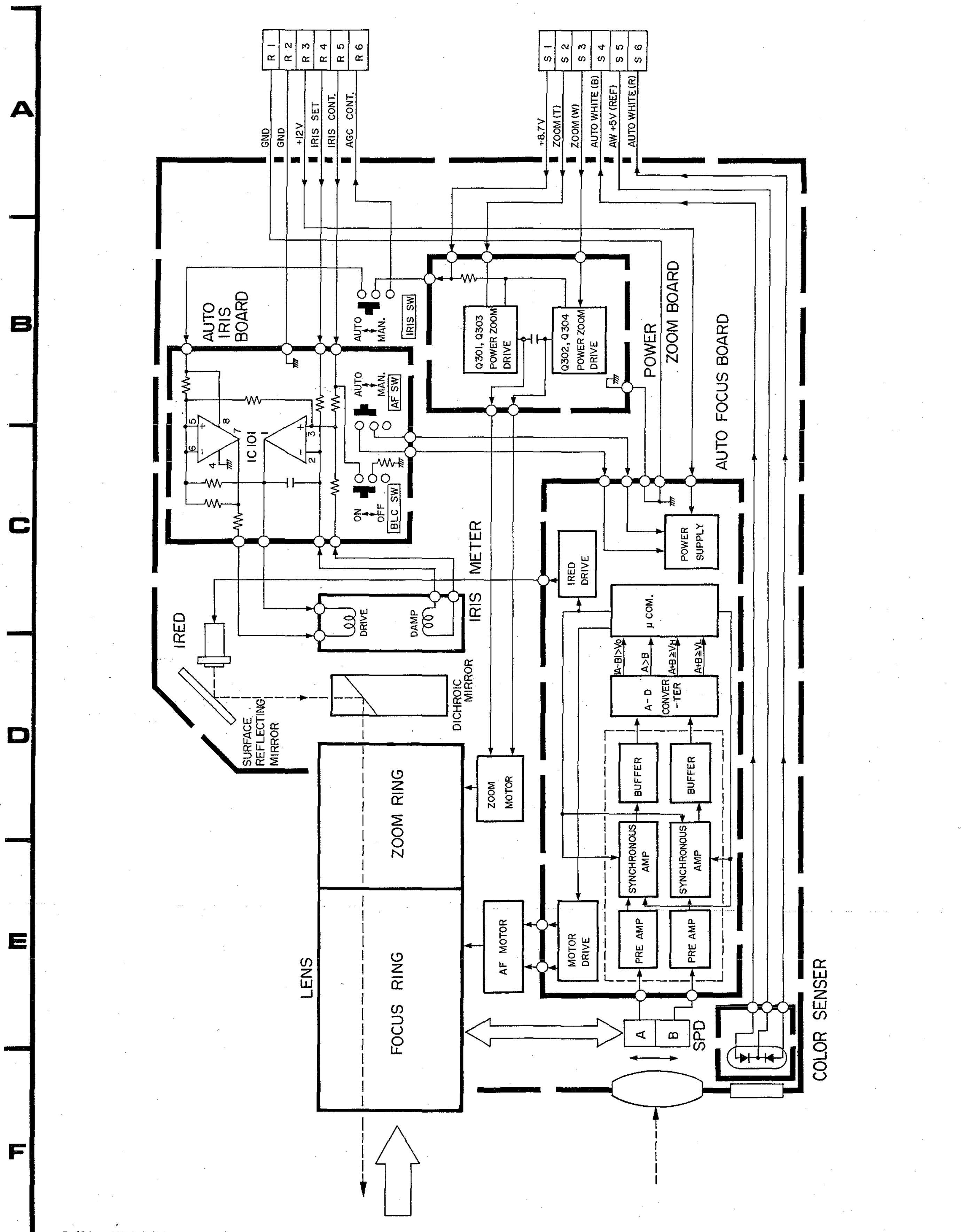
Interchangeable parts	Supplied parts
SB709, 709 (P-R), 709 (Q-R)	2SB709 (Q, R)
2SC2778, 2778 (B, C), 2778 (C, D)	2SC2778 (C, D)
2SD601, 601 (Q, R)	2SD601 (Q, R)
2SD601A, 601A (Q, R)	2SD601 (Q, R)

6. It is possible than the wiring diagram is inconsistent with the actual connection because of certain design improvements, etc. The diagram, therefore, should be used only for reference.
7. Color of P.C.B. pattern.
   ▨ Red color shows top side pattern of PC BOARD.
   ▩ Gray color shows bottom side pattern of PC BOARD.
8. **This circuit diagram is prepared primarily centered around GX-N7U/UT. As to GX-N4U/UT, only those points that differ from this diagram are described in the second parts of the Operation Manual. For details, refer to page 31 and thereafter.**

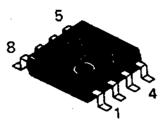
4 BLOCK DIAGRAM OF EVF


A
B
C
D
E
F
1
2
3
4
5
V02 CRT
DY02
DEF YOKE
EVF BOARD
Q831 G1 DRIVE
C833
R834
BRIGHT
FOCUS
R842
R843
R BLOCK
T831 HVT
HV
5V
R873
V.HEIGHT
LIN. COIL
R841
H.HOLD
Q832
H.OUT
Z1
Z2
Z3
Z4
G1
G3
G2
H
K
(A)
(G3)
(G2)
(G1)
(H)
(K)
GND
VIDEO
V. DEF
H.DRIVE
IC801
VIDEO AMP, SYNC SEP,
V, H AMP & DRIVE
DISPLAY MIX
VERTICAL OSC
VERTICAL DRIVE & OUT
HORIZONTAL OSC
IRIS LEVEL DISPLAY
VIDEO AMP
V. SYNC SEP.
REFERENCE VOLTAGE
SYNC SEP.
HORIZONTAL AFC
Q802
REF. VOLTAGE
C802
D802
D803
D804
P02
EVF CONNECTOR PLUG
(8 PIN)
OUT DOOR
R. LED
IN DOOR
VIDEO LEVEL
+5V

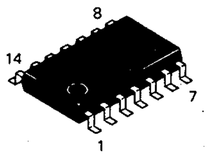
5 BLOCK DIAGRAM OF LENS (GX-N7U/UT)


R 1
R 2
R 3
R 4
R 5
R 6
GND
GND
+12V
IRIS SET
IRIS CONT.
AGC CONT.
S 1
S 2
S 3
S 4
S 5
S 6
+8.7V
ZOOM (T)
ZOOM (W)
AUTO WHITE (B)
AW +5V (REF)
AUTO WHITE (R)
AUTO IRIS BOARD
AUTO
MAN.
IRIS SW
AUTO
MAN.
AF SW
ON
OFF
BLC SW
IC 101
Q301, Q303 POWER ZOOM DRIVE
Q302, Q304 POWER ZOOM DRIVE
POWER ZOOM BOARD
AUTO FOCUS BOARD
POWER SUPPLY
IRED DRIVE
μ COM.
IA-BI>Vo
A>B
A+B≧VH
A+B≧VL
A-D CONVER-TER
BUFFER
BUFFER
SYNCHRONOUS AMP
SYNCHRONOUS AMP
PRE AMP
PRE AMP
MOTOR DRIVE
AF MOTOR
ZOOM MOTOR
IRIS METER
DRIVE
DAMP
IRED
SURFACE REFLECTING MIRROR
DICHROIC MIRROR
ZOOM RING
FOCUS RING
LENS
A
B
SPD
COLOR SENSER
A
B
C
D
E
F
1
2
3
4
5

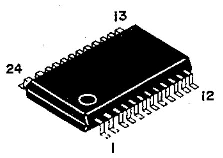
2 PIN ARRANGEMENTS OF ICs, TRANSISTORS AND DIODES



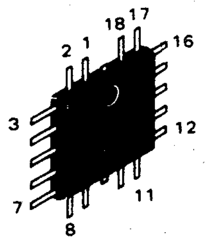
MN8029S (8 pin)
NJM082M (8 pin)
μPC4558G (8 pin)



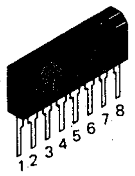
μPC4741G(14 pin)
μPD4013BG (14 pin)
M51545P (16 pin)



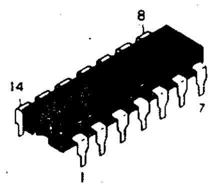
BA7020F (22 pin)
M51261P (20 pin)
M51262P (22 pin)
M51263P (24 pin)
M51264P (28 pin)


18
17
2
1
16
3
12
7
11
8

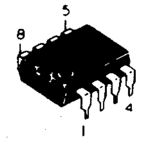
HA11720MP (18 pin)
HA11748B (28 pin)



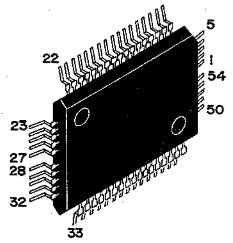
N5232L (8 pin)



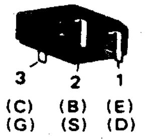
SN76670 (N) (14 pin)



NJM3413D (8 pin)


5
22
1
54
50
23
27
28
32
33

HD61907 (54 pin)

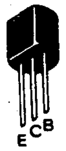


CHIP TRANSISTOR

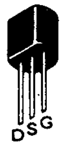
2SA1022(QR)
2SA1034(R-T)
2SB709(QR)
2SB2709(P-R)
2SC2405(R-T)
2SC2778(C,D)
2SD601(QR)
2SD601A(QR)
2SD1030(RS)

CHIP FET

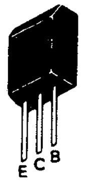
2SK198(Q)



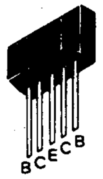
2SA564(R)
2SA564A(Q)
2SA683
2SA844(C)
2SA893A
2SA921(R-T)
2SC458
2SC829(C)
2SC1213
2SC1685(R)
2SC1890A(E,F)
2SD889(QR)
2SD974



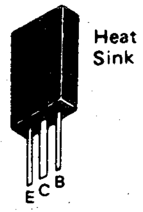
2SK218(P)



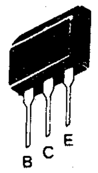
2SA673A
2SB605(L)
2SC454(C)
2SD571(L)



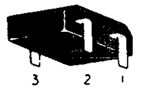
2SA798
2SC2259


Heat Sink
E
C
B

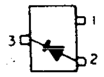
2SD781
2SD975



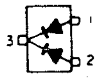
2SB778T
2SB788(T)
2SC2647(C)
2SD638
2SD958



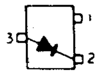
CHIP DIODE



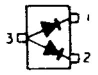
MA151K
MA152K
MA3047



MA151WK
MA152WK
MA157

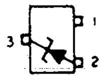


MA151A
MA152A

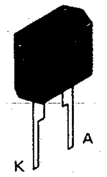


MA151WA
MA152WA

CHIP ZENER DIODE



MA3062
MA3075
MA3051

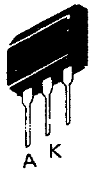


VARIABLE CAPACITOR

—|◀—

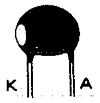
KV-1236XY

DIODE



—▶|—

MA522R



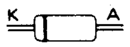
DIODE

—|◀—

VD1121

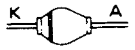
—|◀|◀—

VD1222



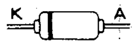
DIODE —|◀—

1SS16
1SS99
1SS133-Y



DIODE —|◀—

V05E
V06C
V09E
V09G



DIODE —|◀—

W06A
1SS81
1S2473H
1S2076
HV70FB

ZENER DIODE —|◀—

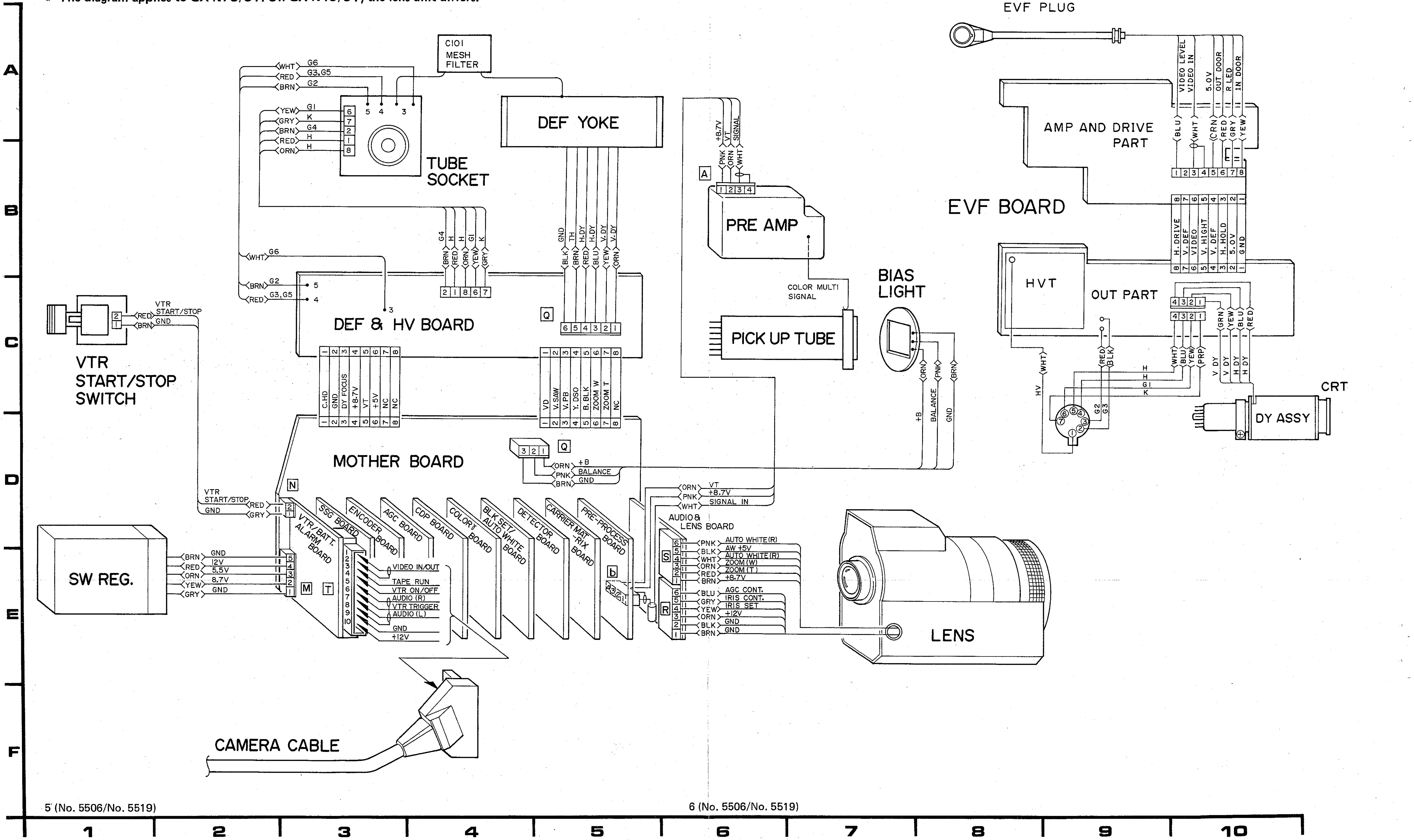
RD2.7E(B)
RD5.6E(B3)
RD6.2E(B2)
RD7.5E(B2)
RD10E(B)
RD12E(B)
RD15E(B)

VARIABLE CAPACITOR DIODE —|◀—

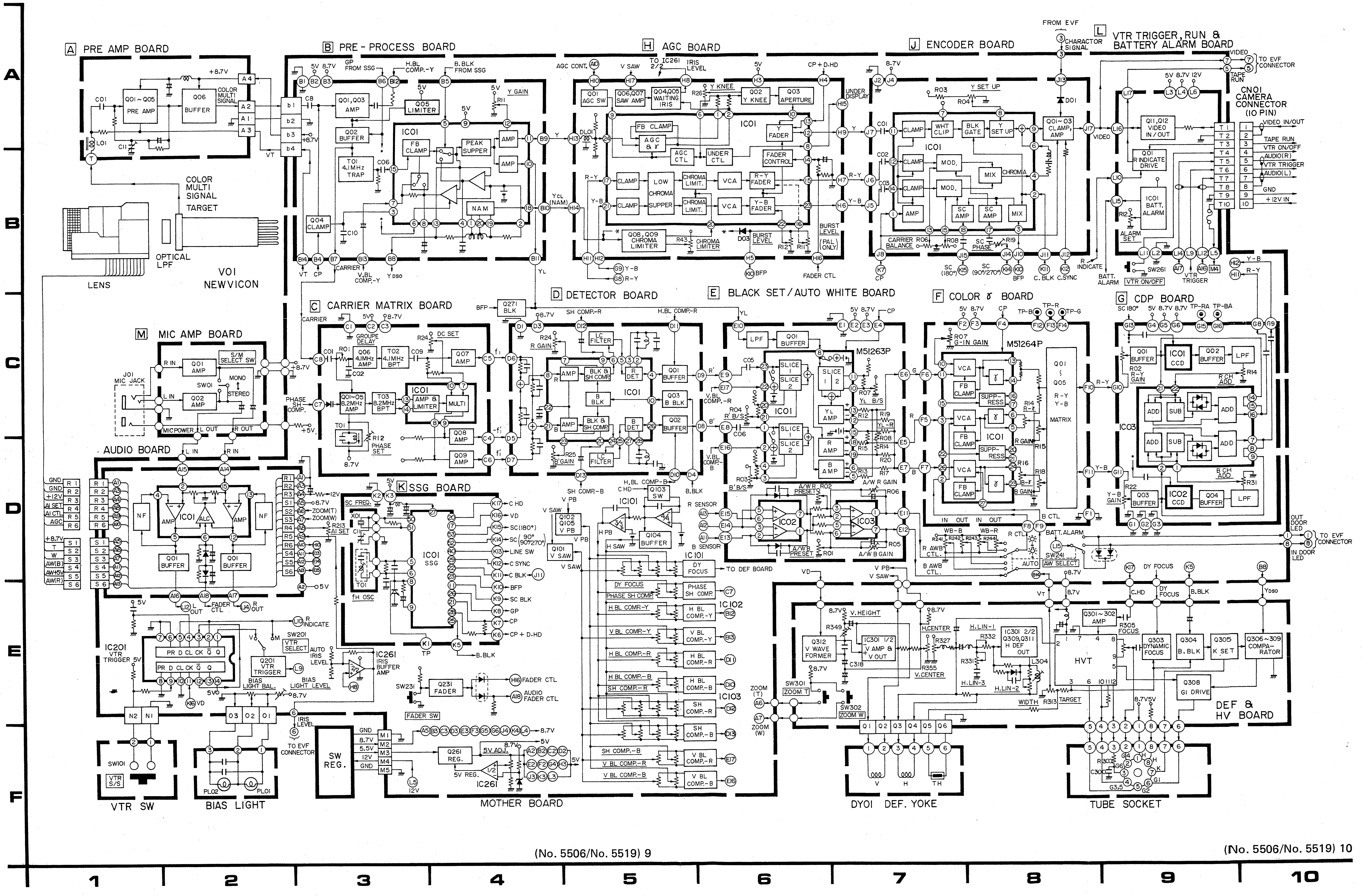
1SV68

3 WIRING DIAGRAM

* **The diagram applies to GX-N7U/UT. On GX-N4U/UT, the lens unit differs.**

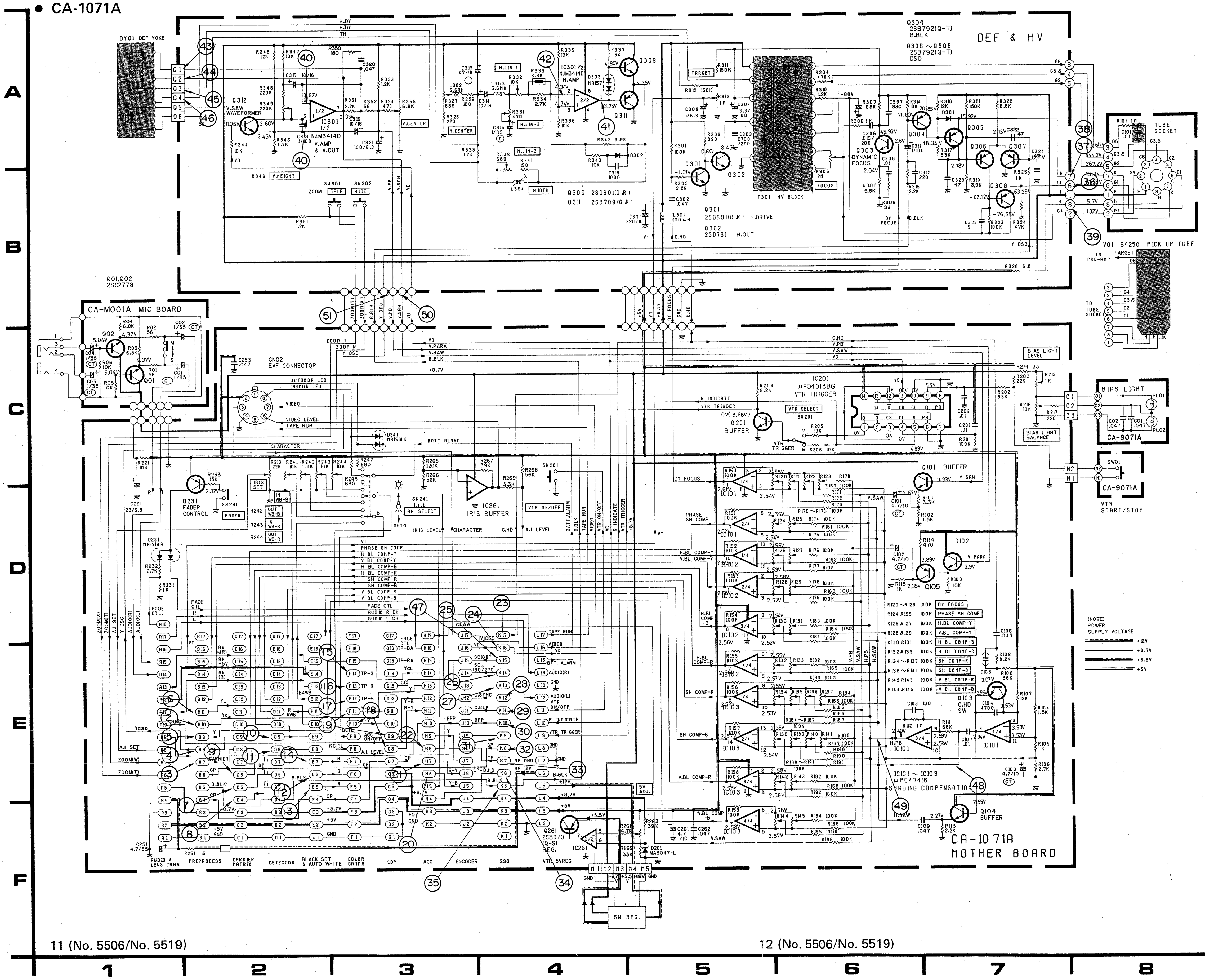

EVF PLUG
C101 MESH FILTER
DEF YOKE
TUBE SOCKET
PRE AMP
PICK UP TUBE
BIAS LIGHT
COLOR MULTI SIGNAL
EVF BOARD
AMP AND DRIVE PART
OUT PART
HVT
CRT
DY ASSY
DEF & HV BOARD
MOTHER BOARD
VTR START/STOP SWITCH
SW REG.
VTR/BATT. ALARM BOARD
SSG BOARD
ENCODER BOARD
AGC BOARD
CDP BOARD
COLOR BOARD
BLK SET/AUTO WHITE BOARD
DETECTOR BOARD
CARRIER MATRIX BOARD
PRE-PROCESS BOARD
AUDIO & LENS BOARD
LENS
CAMERA CABLE
VIDEO LEVEL
VIDEO IN
5.0V
OUT DOOR
R LED
IN DOOR
H.DRIVE
V.DEF
VIDEO
V.HIGHT
V.DEF
H.HOLD
5.0V
GND
C.HD
GND
DY FOCUS
+8.7V
VT
+5V
NC
NC
VD
V.SAW
V.PB
Y.DSO
B.BLK
ZOOM W
ZOOM T
NC
G6
G3,G5
G2
G1
K
G4
H
H
GND
TH
H.DY
H.DY
V.DY
V.DY
+8.7V
VT
SIGNAL
VTR START/STOP
GND
12V
5.5V
8.7V
GND
VIDEO IN/OUT
TAPE RUN
VTR ON/OFF
AUDIO (R)
VTR TRIGGER
AUDIO (L)
GND
+12V
+B
BALANCE
GND
VT
+8.7V
SIGNAL IN
AUTO WHITE (R)
AW +5V
AUTO WHITE (R)
ZOOM (W)
ZOOM (T)
+8.7V
AGC CONT.
IRIS CONT.
IRIS SET
+12V
GND
GND
HV
H
H
G1
K
G2
G3
V DY
V DY
H DY
H DY
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10

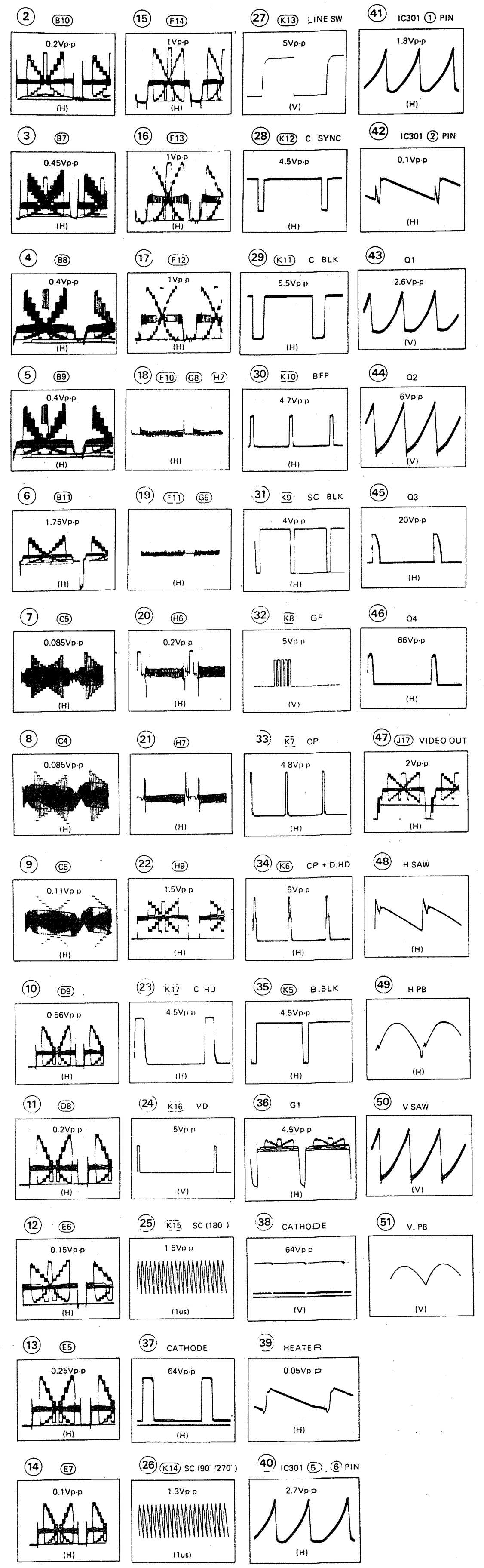
6 BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N7U/UT)


A PRE AMP BOARD
B PRE - PROCESS BOARD
H AGC BOARD
J ENCODER BOARD
L VTR TRIGGER, RUN & BATTERY ALARM BOARD
FROM EVF
CN01 CAMERA CONNECTOR (10 PIN)
VIDEO IN/OUT
TAPE RUN
VTR ON/OFF
AUDIO(R)
VTR TRIGGER
AUDIO(L)
GND
+12V IN
TO EVF CONNECTOR
COLOR MULTI SIGNAL
TARGET
OPTICAL LPF
LENS
V01 NEWVICON
C CARRIER MATRIX BOARD
D DETECTOR BOARD
E BLACK SET / AUTO WHITE BOARD
F COLOR γ BOARD
G CDP BOARD
M MIC AMP BOARD
MIC JACK
AUDIO BOARD
K SSG BOARD
MOTHER BOARD
DEF & HV BOARD
VTR SW
BIAS LIGHT
DY01 DEF. YOKE
TUBE SOCKET
SW REG.
HVT
1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F

7-1 CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N7U/UT)

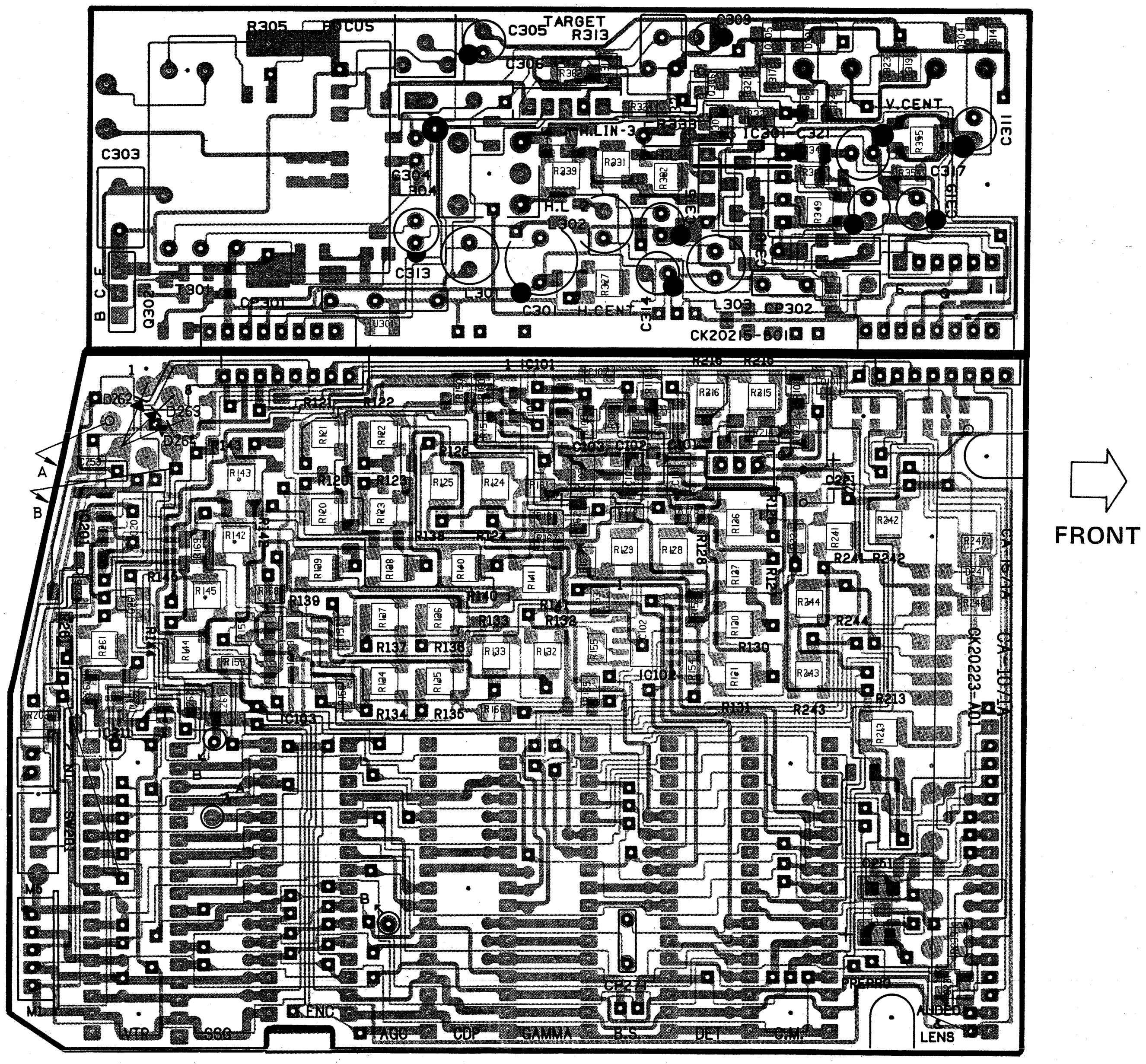
● CA-1071A

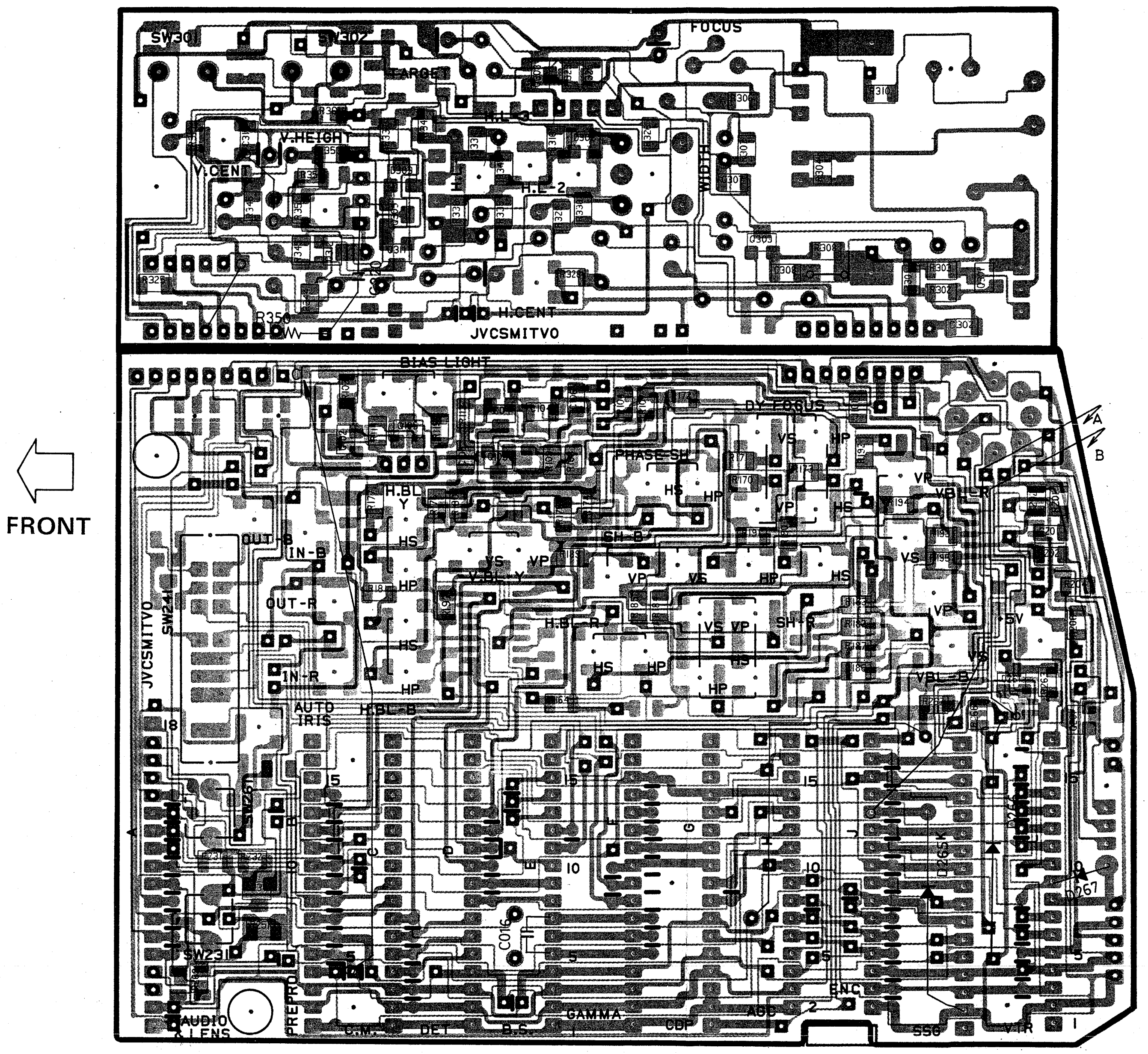

A
B
C
D
E
F
1
2
3
4
5
6
7
8
DEF & HV
DY01 DEF YOKE
T301 HV BLOCK
V01 S4250 PICK UP TUBE
TUBE SOCKET
CA-M001A MIC BOARD
Q01,Q02 2SC2778
CN02 EVF CONNECTOR
IC201 μPD4013BG VTR TRIGGER
Q201 BUFFER
IC261 IRIS BUFFER
Q101 BUFFER
Q102
Q103 C.HD SW
Q104 BUFFER
IC101 ~ IC103 μPC4741G SHADING COMPENSATION
BIAS LIGHT
CA-8071A
CA-9071A
VTR START/STOP
SW REG.
CA-1071A MOTHER BOARD
(NOTE) POWER SUPPLY VOLTAGE
+12V
+8.7V
+5.5V
+5V
AUDIO & LENS CONN
PREPROCESS
CARRIER MATRIX
DETECTOR
BLACK SET & AUTO WHITE
COLOR GAMMA
CDP
AGC
ENCODER
SSG
VTR 5VREG



7-2 BOARD DIAGRAM OF MOTHER BOARD

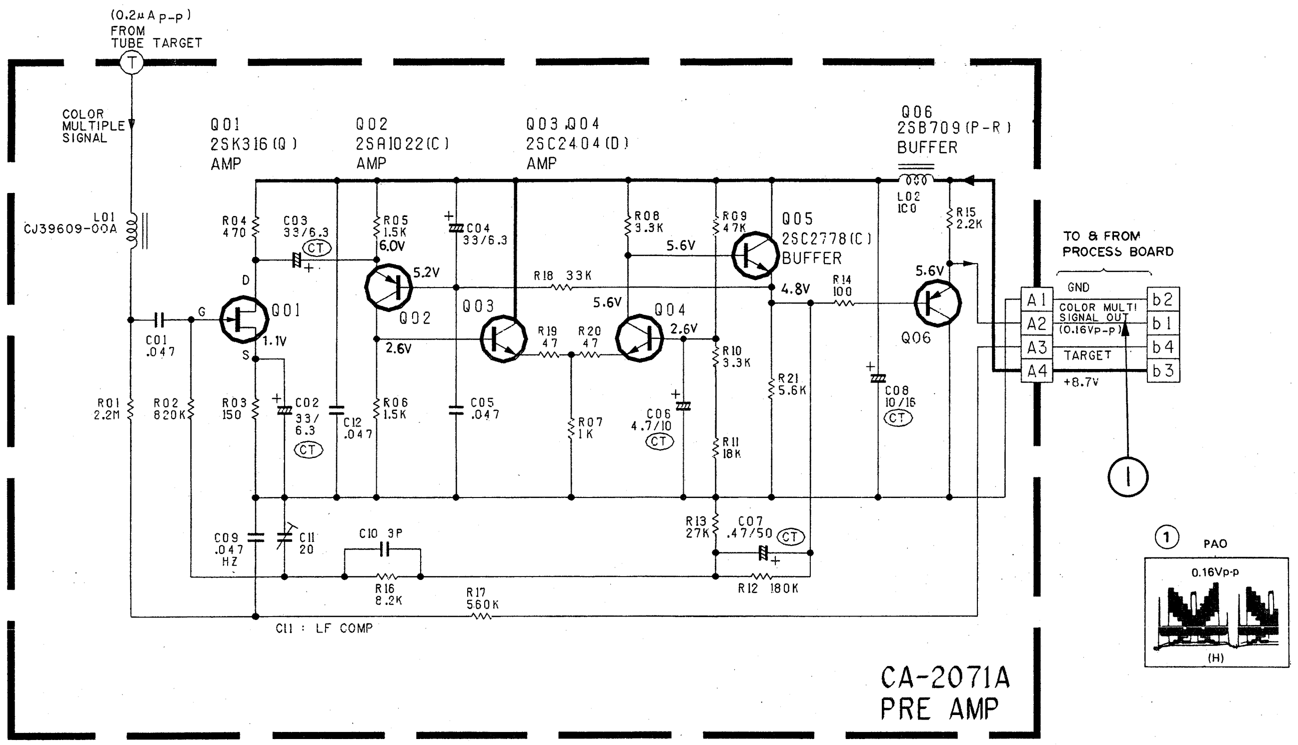
- **CA-1071A**


R305
FOCUS
C305
TARGET
R313
C303
V.CENT
H.LIN-3
H.L
C313
L301
H.CENT
L303
C302
CK20216-B01
IC101
IC102
IC103
R213
CA-1071A
CK20223-A01
VTR
SSG
ENC
AGC
CDP
GAMMA
B.S.
DET
C.M.
PREPRO
AUDIO
LENS
A
B
FRONT


FRONT
SW301
SW302
TARGET
FOCUS
V.HEIGH
V.CENT
H.L-2
H.CENT
R350
JVCSMITVO
BIAS LIGHT
PHASE SH
H.BL
OUT-B
IN-B
OUT-R
IN-R
SW24
AUTO IRIS
H.BL-B
VBL-R
VBL-B
SW23
AUDIO
LENS
PREPRO
C.M.
DET
B.S.
GAMMA
CDP
AGC
ENC
SSG
VTR
A
B

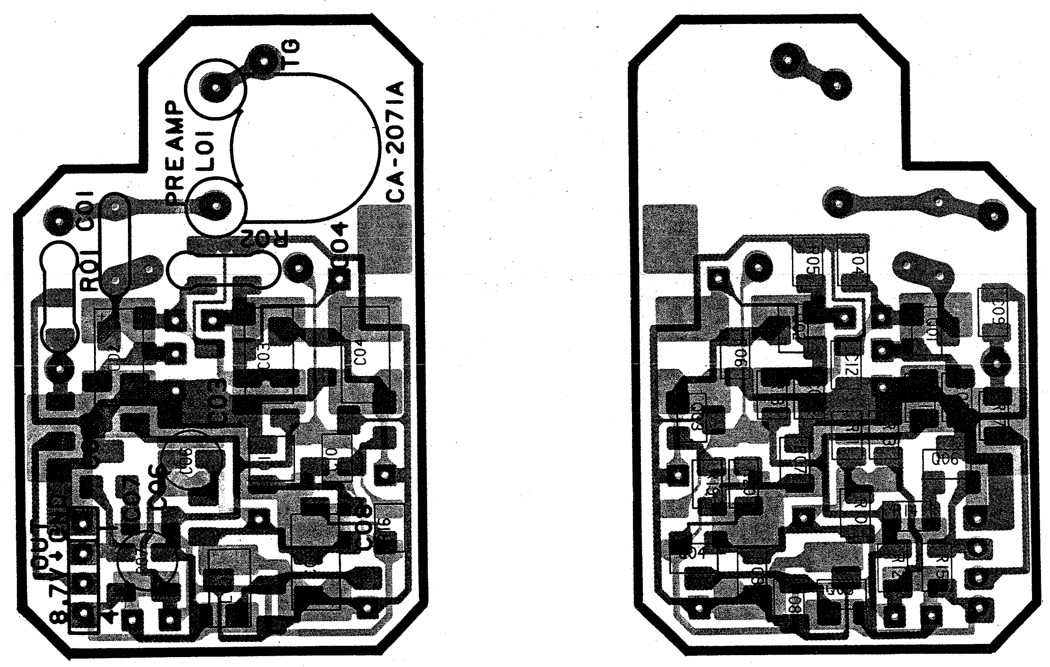
8-1 CIRCUIT DIAGRAM OF PRE-AMP

- CA-2071A


(0.2μA p-p)
FROM
TUBE TARGET
COLOR MULTIPLE SIGNAL
L01
CJ39609-00A
Q01
2SK316(Q)
AMP
Q02
2SA1022(C)
AMP
Q03,Q04
2SC2404(D)
AMP
Q06
2SB709(P-R)
BUFFER
Q05
2SC2778(C)
BUFFER
L02
1C0
R04 470
C03 33/6.3
R05 1.5K
6.0V
C04 33/6.3
R08 3.3K
R09 47K
R15 2.2K
5.2V
5.6V
4.8V
5.6V
R18 33K
R14 100
TO & FROM
PROCESS BOARD
GND
COLOR MULTI SIGNAL OUT (0.16Vp-p)
TARGET
+8.7V
A1
A2
A3
A4
b2
b1
b4
b3
C01 .047
1.1V
2.6V
R19 47
R20 47
2.6V
R10 3.3K
R21 5.6K
C08 10/16
R01 2.2M
R02 820K
R03 150
C02 33/6.3
C12 .047
R06 1.5K
C05 .047
R07 1K
C06 4.7/10
R11 18K
C09 .047 MZ
C11 20
C10 3P
R16 8.2K
R17 560K
R13 27K
C07 .47/50
R12 180K
C11 : LF COMP
①
① PA0
0.16Vp-p
(H)
CA-2071A
PRE AMP

8-2 BOARD DIAGRAM OF PRE-AMP

- CA-2071A

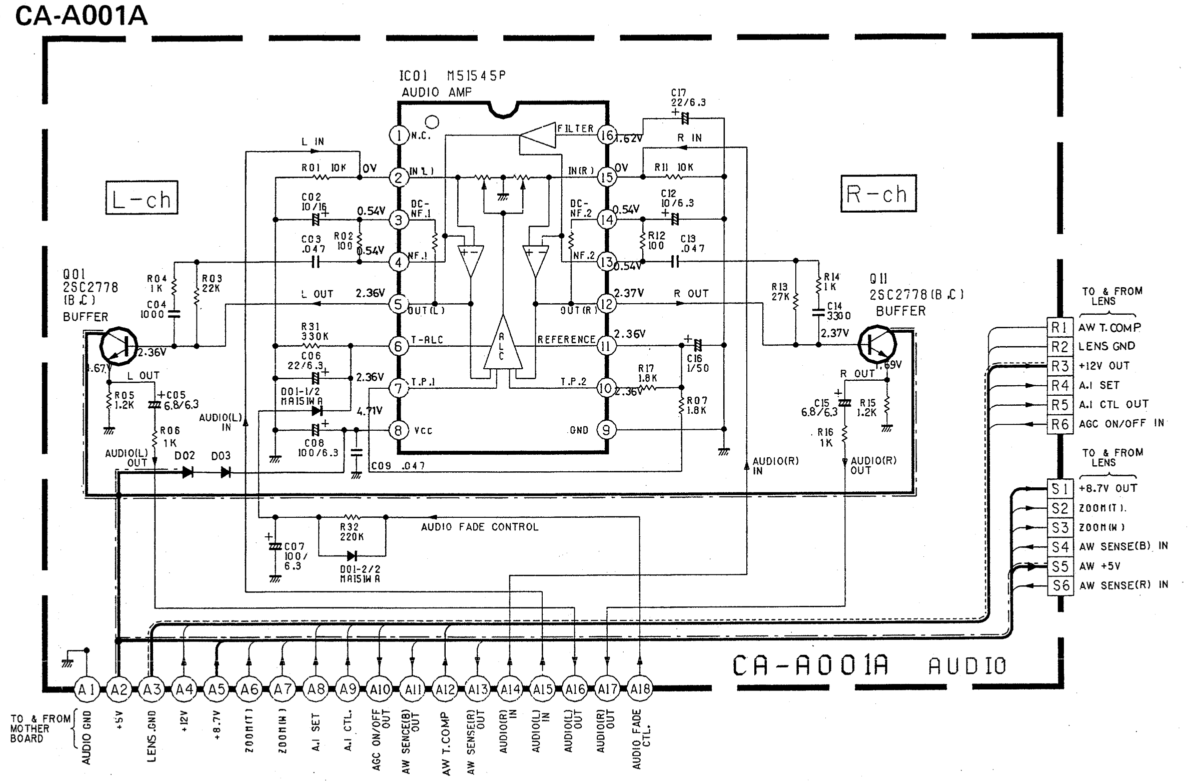

TG
PREAMP
L01
CA-2071A
Q01
R01
R02
Q04
8.7V
C08

TOP VIEW

BOTTOM VIEW

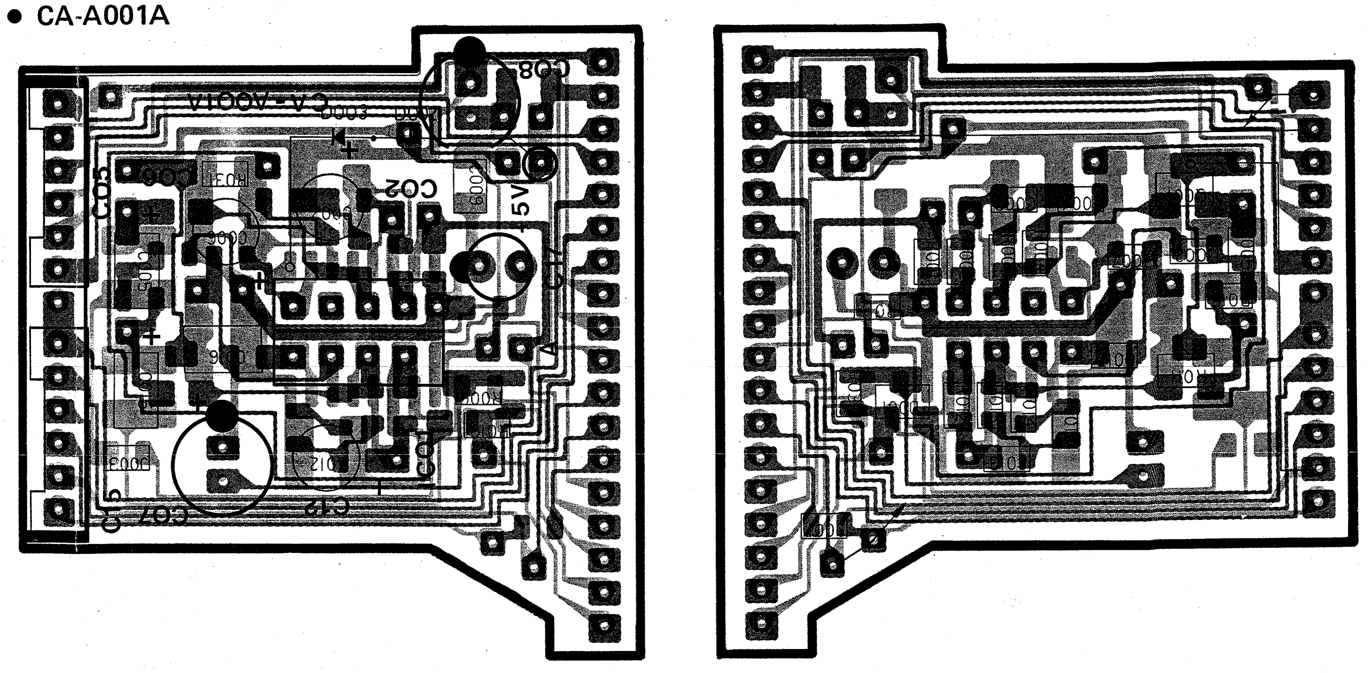
9-1 CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ

- CA-A001A


IC01 M51545P
AUDIO AMP
C17 22/6.3
FILTER
L IN
R IN
R01 10K
R11 10K
L-ch
R-ch
C02 10/16
C12 10/6.3
C03 .047
R02 100
R12 100
C13 .047
Q01
2SC2778
(B.C)
BUFFER
Q11
2SC2778(B.C)
BUFFER
R04 1K
R03 22K
C04 1000
L OUT
R OUT
R13 27K
R14 1K
C14 3300
R31 330K
C06 22/6.3
D01-1/2 MA151WA
C08 100/6.3
C09 .047
R05 1.2K
C05 6.8/6.3
R06 1K
AUDIO(L) OUT
AUDIO(L) IN
D02
D03
R17 1.8K
C16 1/50
R07 1.8K
C15 6.8/6.3
R15 1.2K
R16 1K
AUDIO(R) IN
AUDIO(R) OUT
C07 100/6.3
R32 220K
D01-2/2 MA151WA
AUDIO FADE CONTROL
TO & FROM LENS
R1 AW T.COMP
R2 LENS GND
R3 +12V OUT
R4 A.I SET
R5 A.I CTL OUT
R6 AGC ON/OFF IN
TO & FROM LENS
S1 +8.7V OUT
S2 ZOOM(T)
S3 ZOOM(W)
S4 AW SENSE(B) IN
S5 AW +5V
S6 AW SENSE(R) IN
CA-A001A AUDIO
TO & FROM MOTHER BOARD
A1 AUDIO GND
A2 +5V
A3 LENS GND
A4 +12V
A5 +8.7V
A6 ZOOM(T)
A7 ZOOM(W)
A8 A.I SET
A9 A.I CTL
A10 AGC ON/OFF OUT
A11 AW SENSE(B) OUT
A12 AW T.COMP
A13 AW SENSE(R) OUT
A14 AUDIO(R) IN
A15 AUDIO(L) IN
A16 AUDIO(L) OUT
A17 AUDIO(R) OUT
A18 AUDIO FADE CTL.

9-2 BOARD DIAGRAM OF AUDIO BOARD Ⓐ

- CA-A001A

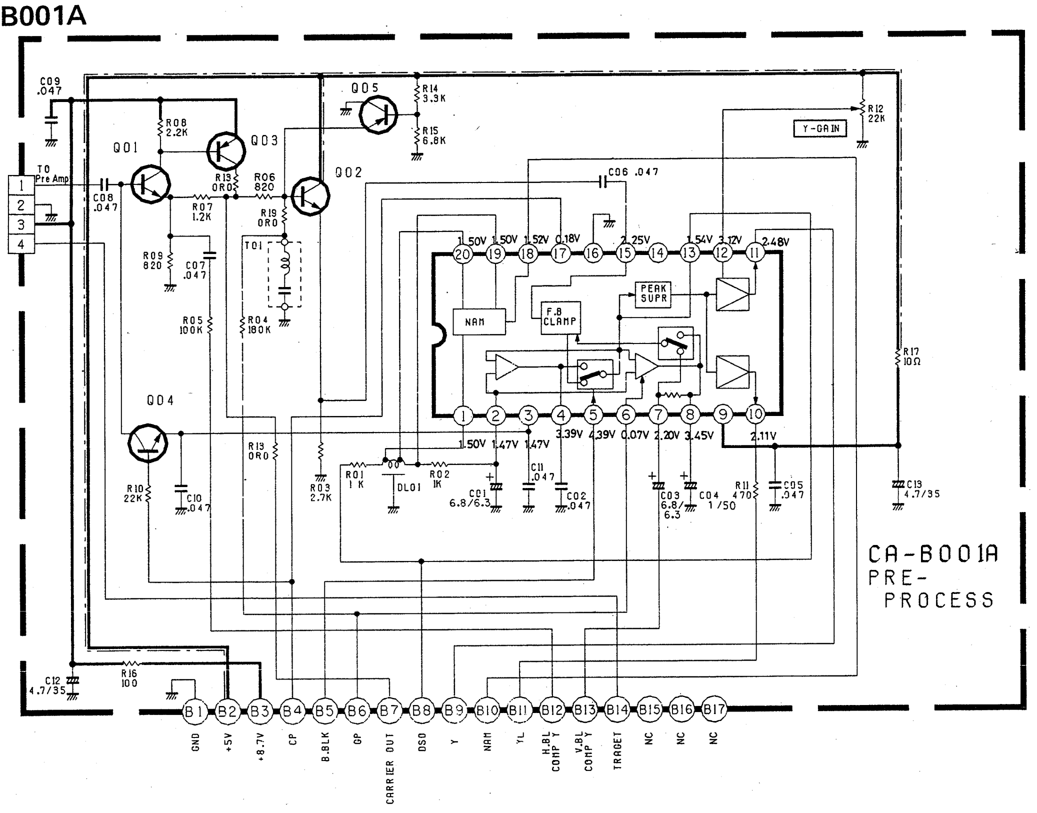

C08
C05
C03
C02
C07
C12
5V

TOP VIEW

BOTTOM VIEW

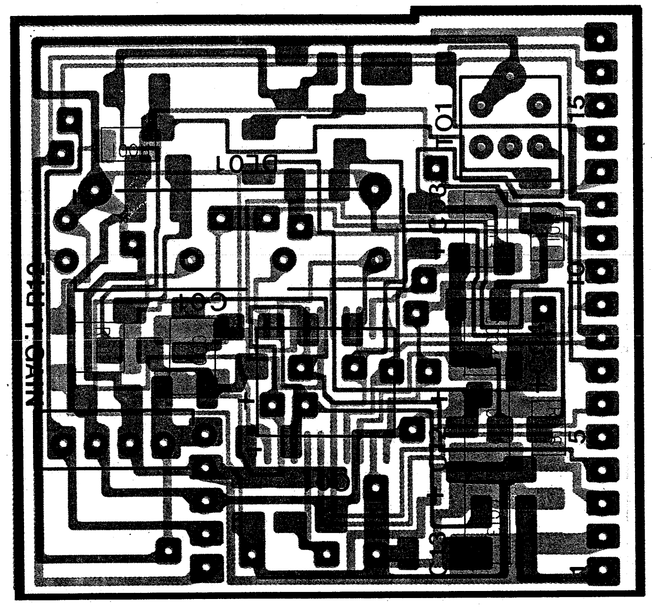
10-1 CIRCUIT DIAGRAM OF PRE-PROCESS BOARD Ⓑ

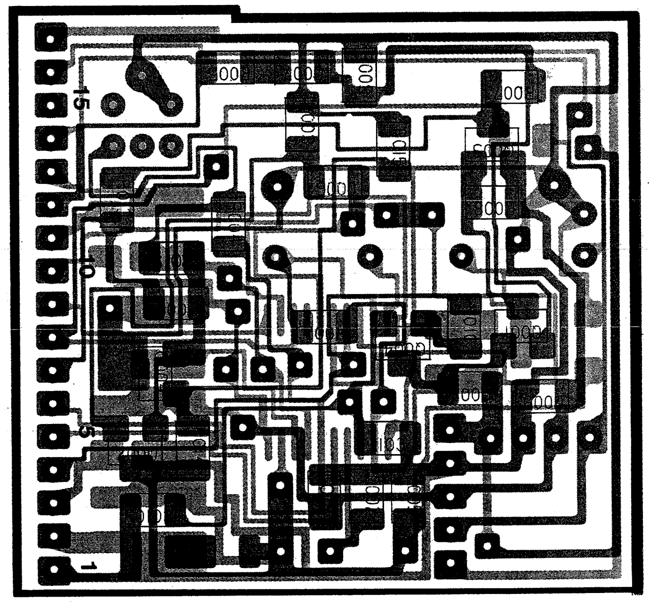
- CA-B001A


CA-B001A
PRE-
PROCESS
Y-GAIN
TO Pre Amp
Q01
Q02
Q03
Q04
Q05
T01
DL01
NAM
F.B CLAMP
PEAK SUPR
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17
GND
+5V
+8.7V
CP
B.BLK
OP
CARRIER OUT
DSO
Y
NAM
YL
H.BL COMP T
V.BL COMP T
TARGET
NC
NC
NC

10-2 BOARD DIAGRAM OF PRE-PROCESS BOARD Ⓑ

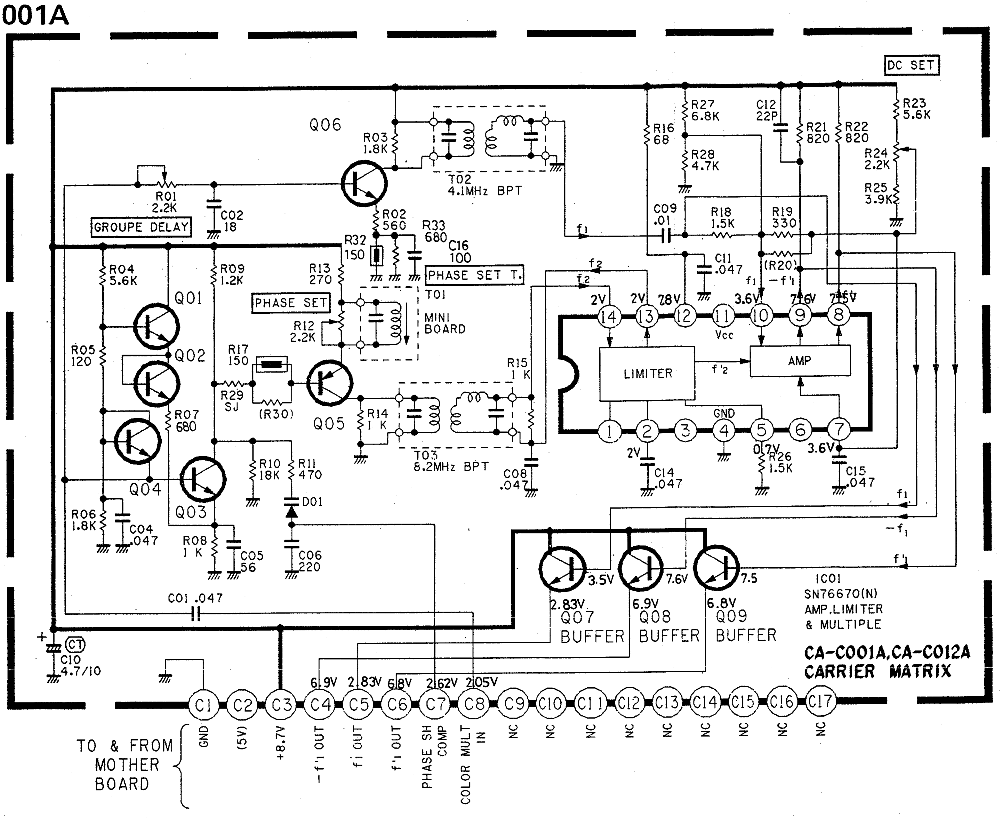
- CA-B001A


TOP VIEW


BOTTOM VIEW

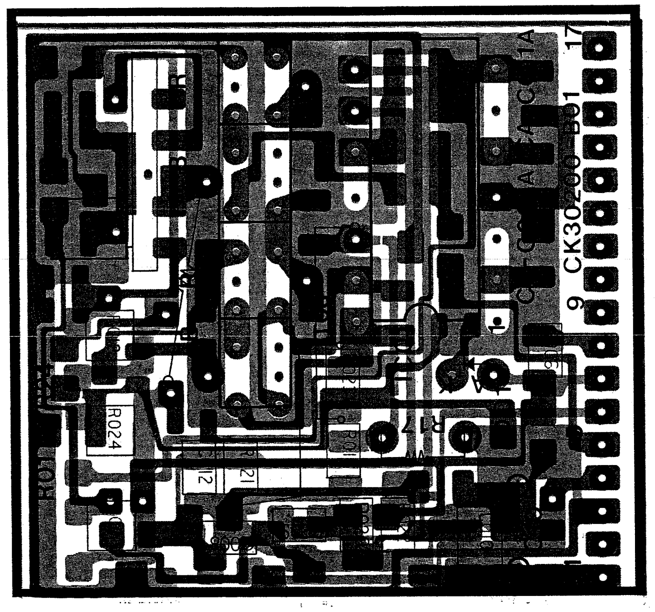
11-1 CIRCUIT DIAGRAM OF CARRIER MATRIX BOARD Ⓒ

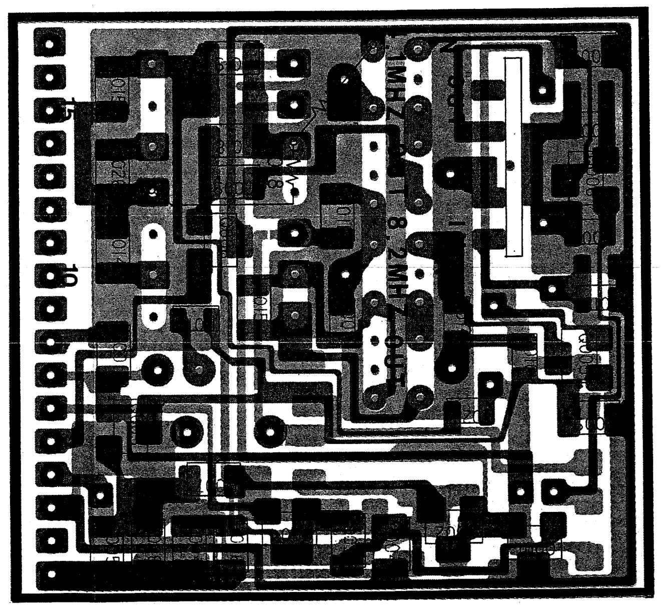
- CA-C001A


DC SET
GROUPE DELAY
PHASE SET
PHASE SET T.
T01
MINI BOARD
T02
4.1MHz BPT
T03
8.2MHz BPT
Q01
Q02
Q03
Q04
Q05
Q06
Q07 BUFFER
Q08 BUFFER
Q09 BUFFER
LIMITER
AMP
IC01
SN76670(N)
AMP.LIMITER
& MULTIPLE
CA-C001A,CA-C012A
CARRIER MATRIX
TO & FROM
MOTHER
BOARD
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17
GND
(5V)
+8.7V
-f'1 OUT
f1 OUT
f'1 OUT
PHASE SH COMP
COLOR MULT IN
NC

11-2 BOARD DIAGRAM OF CARRIER MATRIX BOARD Ⓒ

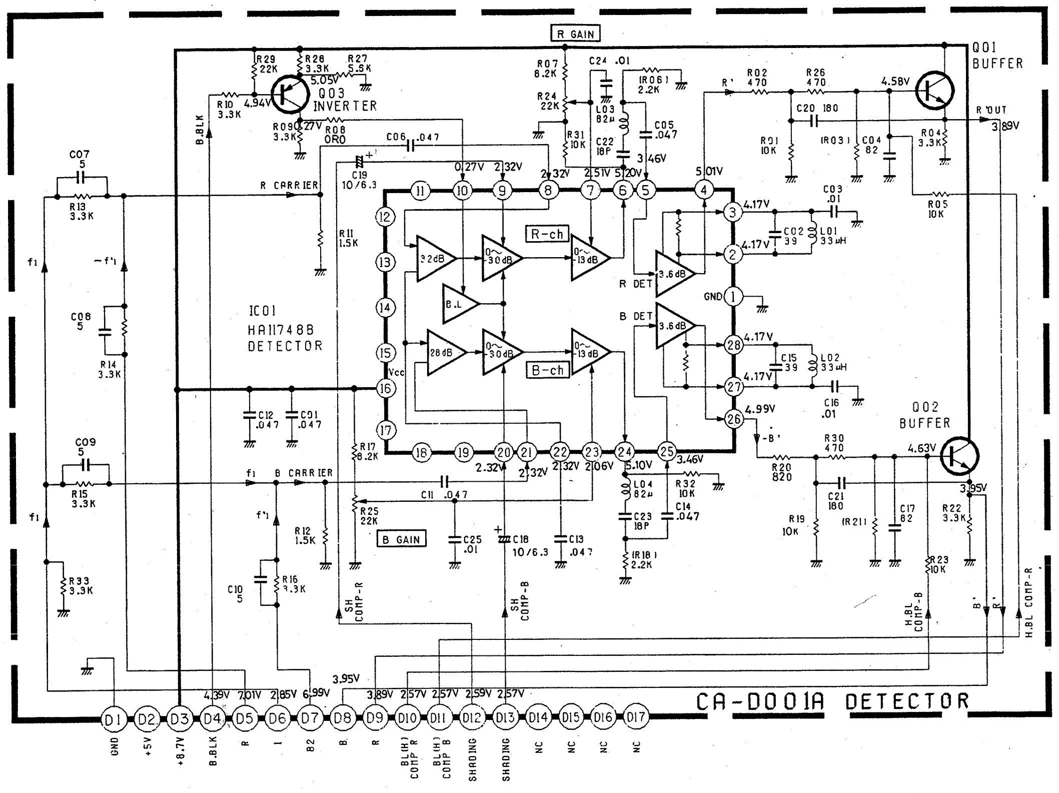
- CA-C001A


TOP VIEW


BOTTOM VIEW

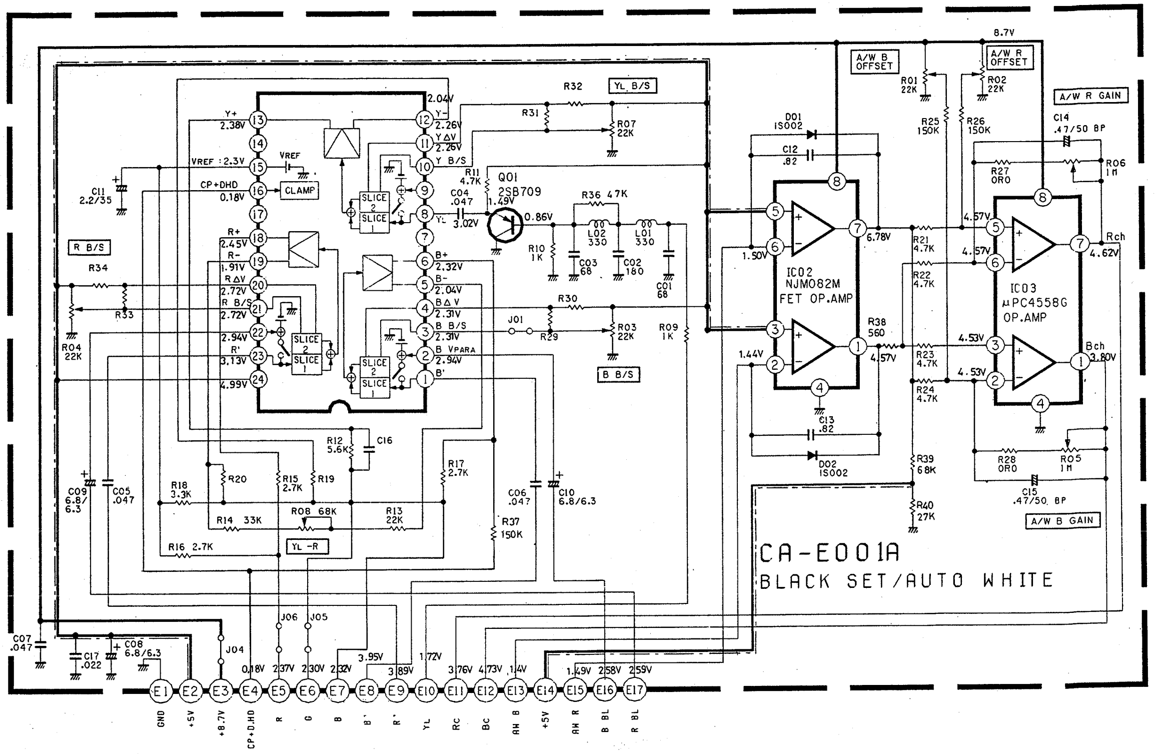
12-1 CIRCUIT DIAGRAM OF DETECTOR BOARD Ⓓ

- CA-D001A


R GAIN
Q01 BUFFER
Q03 INVERTER
R CARRIER
IC01 HA11748B DETECTOR
R-ch
B-ch
R DET
B DET
Q02 BUFFER
B CARRIER
B GAIN
SH COMP-R
SH COMP-B
H.BL COMP-B
H.BL COMP-R
CA-D001A DETECTOR
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D17
GND
+5V
+8.7V
B.BLK
R
B
BLIN COMP R
BLIN COMP B
SHADING
SHADING
NC
NC
NC
NC

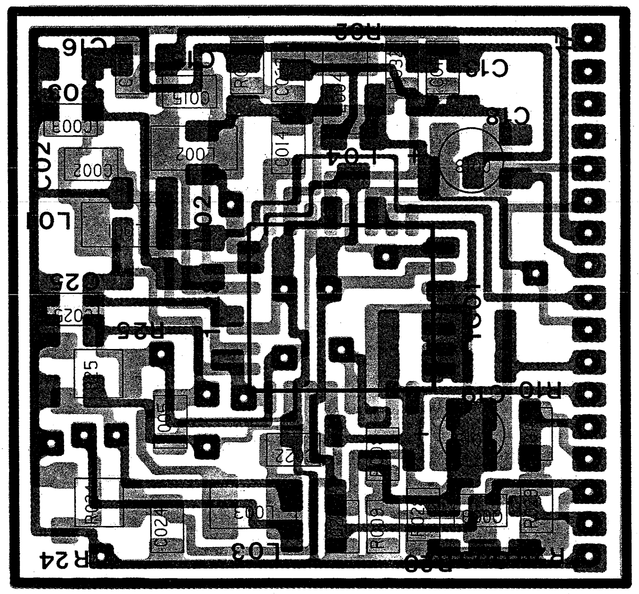
13-1 CIRCUIT DIAGRAM OF BLACK SET/AUTO WHITE BOARD Ⓔ

- CA-E001A

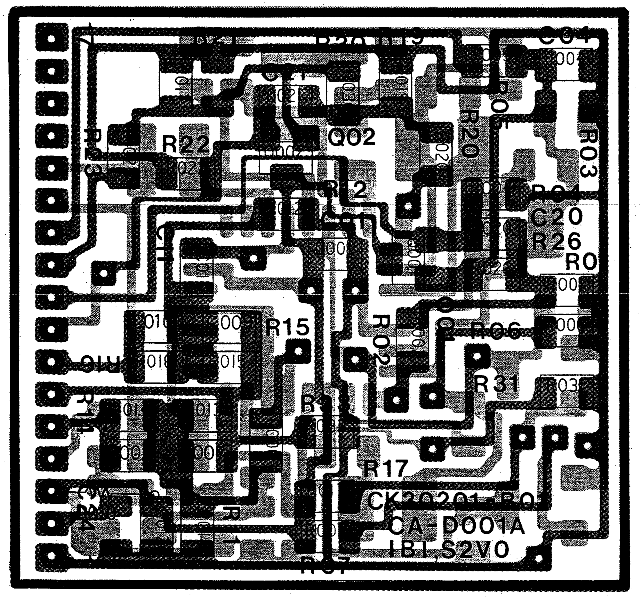

A/W B OFFSET
A/W R OFFSET
A/W R GAIN
YL B/S
R B/S
B B/S
Q01 2SB709
IC02 NJM082M FET OP.AMP
IC03 µPC4558G OP.AMP
CLAMP
SLICE
A/W B GAIN
YL -R
CA-E001A BLACK SET/AUTO WHITE
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E12
E13
E14
E15
E16
E17
GND
+5V
+8.7V
CP+DHD
R
G
B
B'
R'
YL
Rc
Bc
AW R
+5V
AW B
B BL
R BL

12-2 BOARD DIAGRAM OF DETECTOR BOARD Ⓓ

- CA-D001A



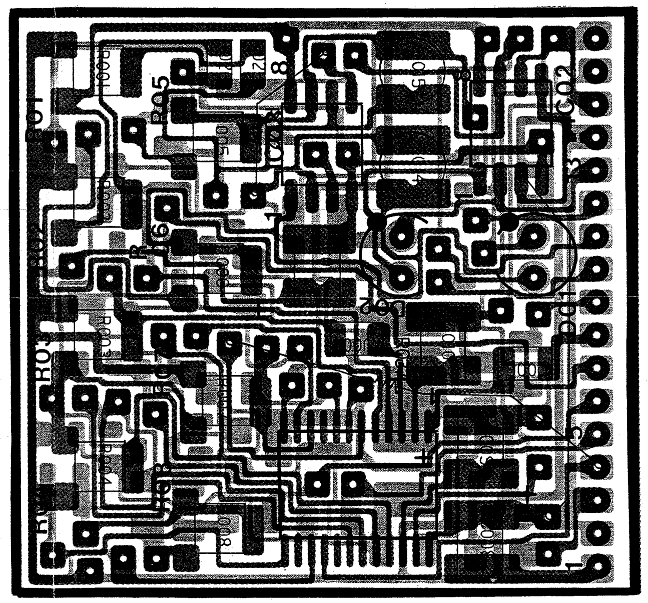
TOP VIEW


R22
Q02
R20
R03
C20
R26
R15
R06
R31
R17
CK30201-R01
CA-D001A
IB1.S2V0

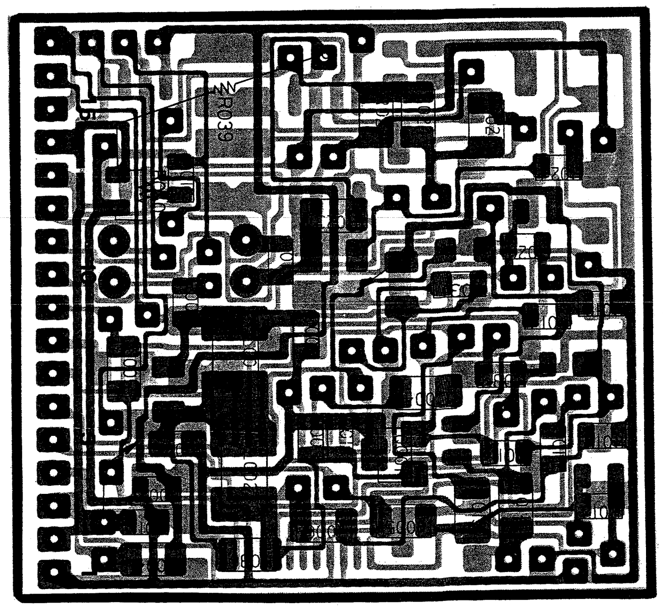
BOTTOM VIEW

13-2 BOARD DIAGRAM OF BLACK SET/AUTO WHITE BOARD Ⓔ

- CA-E001A



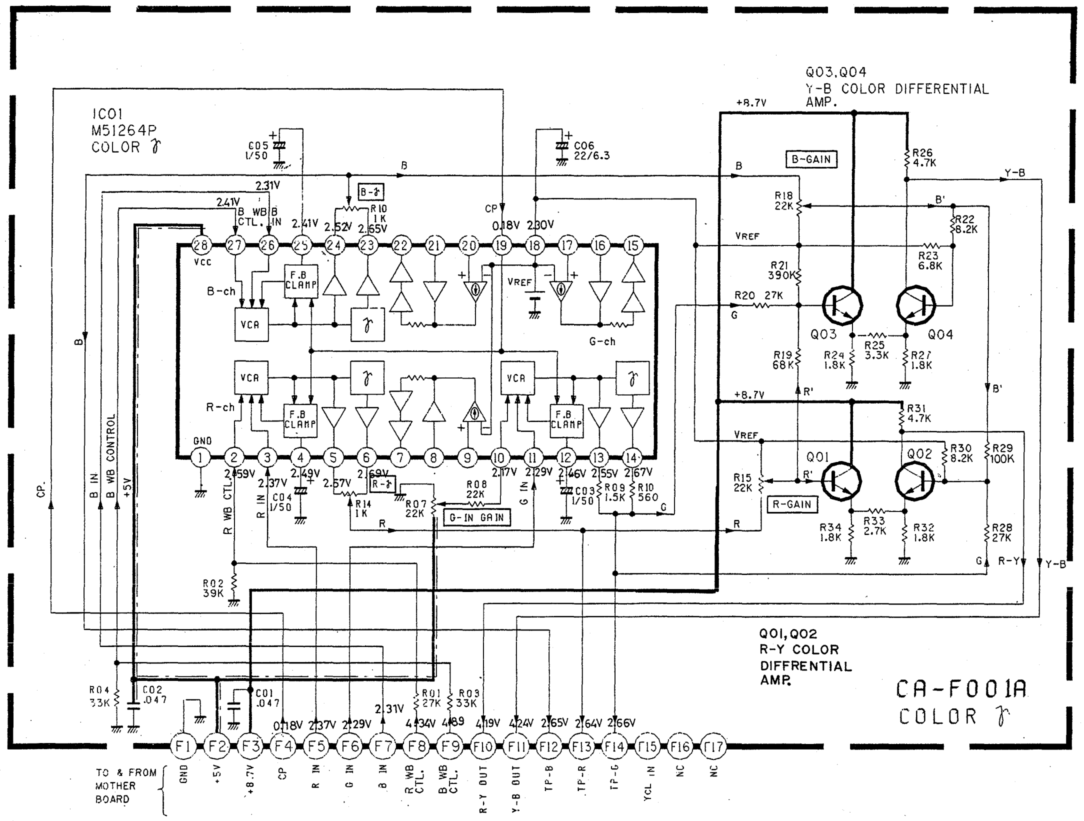
TOP VIEW



BOTTOM VIEW

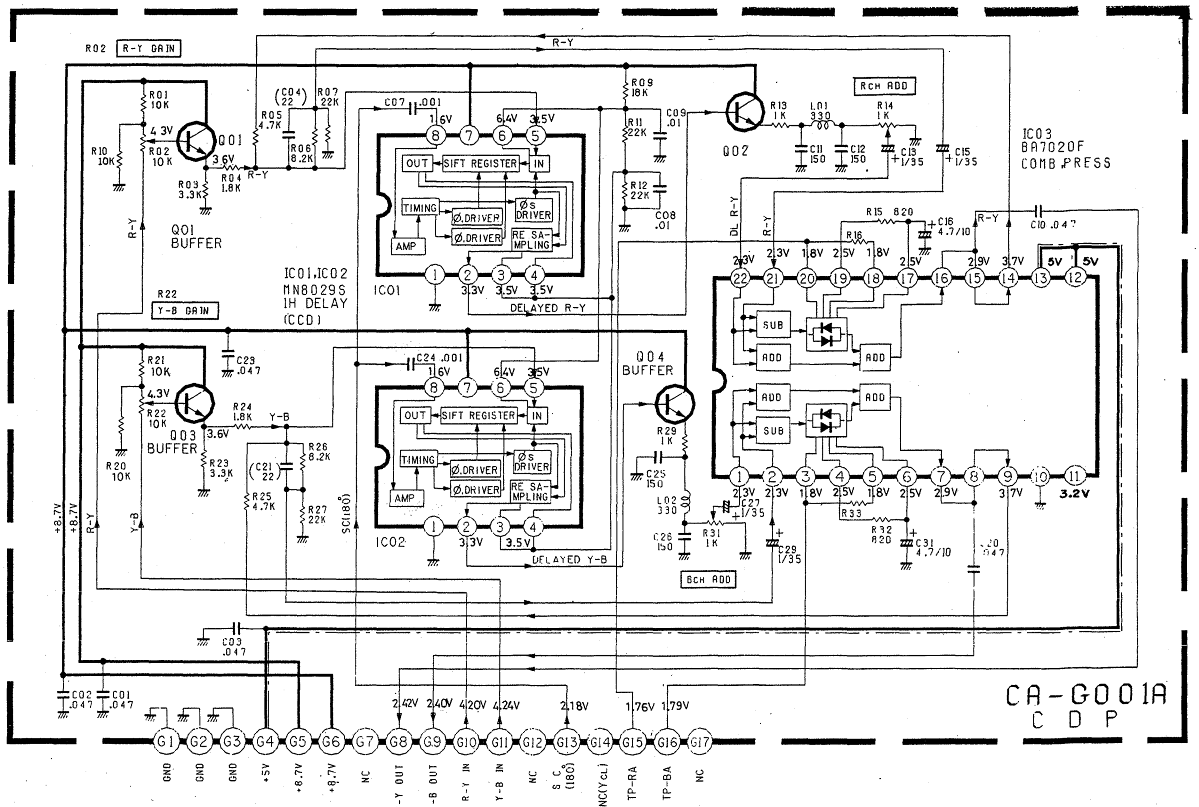
14-1 CIRCUIT DIAGRAM OF COLOR γ BOARD Ⓕ

- CA-F001A


IC01
M51264P
COLOR γ
Q03,Q04
γ-B COLOR DIFFERENTIAL AMP.
Q01,Q02
R-Y COLOR DIFFRENTIAL AMP.
B-GAIN
R-GAIN
G-IN GAIN
VCA
F.B CLAMP
B-ch
R-ch
G-ch
Q01
Q02
Q03
Q04
+8.7V
CA-F001A
COLOR γ
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
F17
GND
+5V
+8.7V
CP
R IN
G IN
B IN
R WB CTL.
B WB CTL.
R-Y OUT
Y-B OUT
TP-B
TP-R
TP-G
YCL IN
NC
NC
TO & FROM MOTHER BOARD

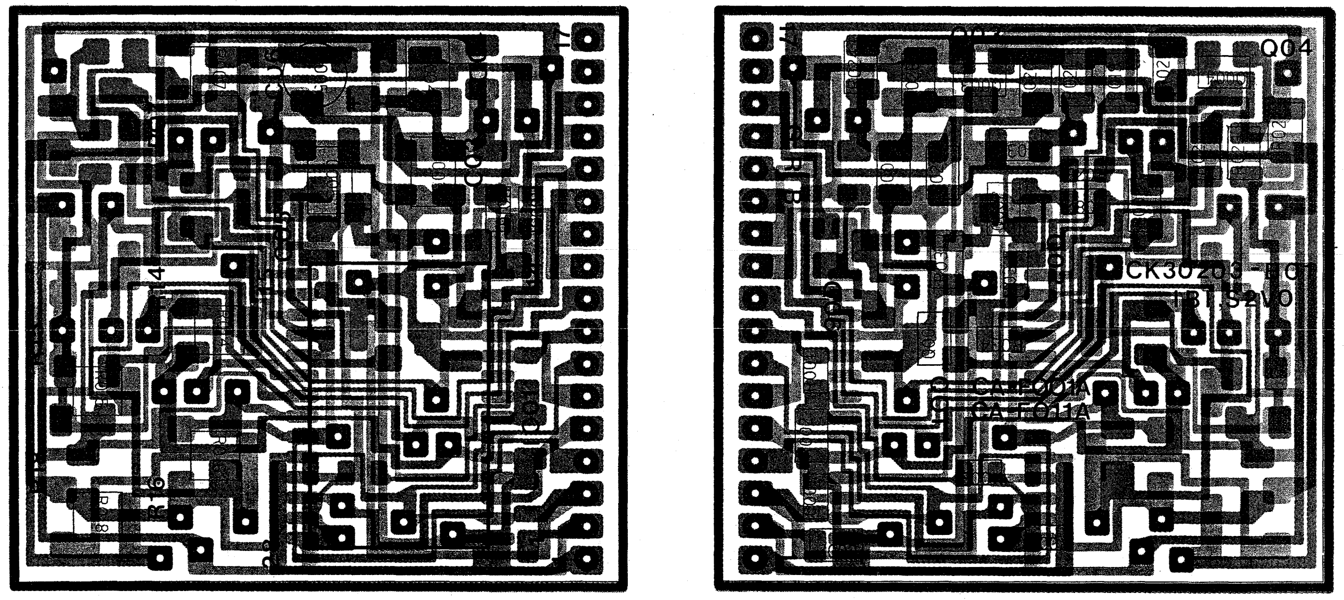
15-1 CIRCUIT DIAGRAM OF CDP BOARD Ⓖ

- CA-G001A


R-Y GAIN
Y-B GAIN
Q01
BUFFER
Q03
BUFFER
Q04
BUFFER
Q02
IC01,IC02
MN8029S
1H DELAY
(CCD)
IC01
IC02
OUT
SIFT REGISTER
IN
TIMING
Ø.DRIVER
ØS DRIVER
RE SA-MPLING
AMP
DELAYED R-Y
DELAYED Y-B
IC03
BA7020F
COMB PRESS
Rch ADD
Bch ADD
SUB
ADD
CA-G001A
C D P
G1
G2
G3
G4
G5
G6
G7
G8
G9
G10
G11
G12
G13
G14
G15
G16
G17
GND
GND
GND
+5V
+8.7V
+8.7V
NC
R-Y OUT
Y-B OUT
R-Y IN
Y-B IN
NC
S.C (180)
NC(YCL)
TP-RA
TP-BA
NC

14-2 BOARD DIAGRAM OF COLOR γ BOARD Ⓕ

- CA-F001A

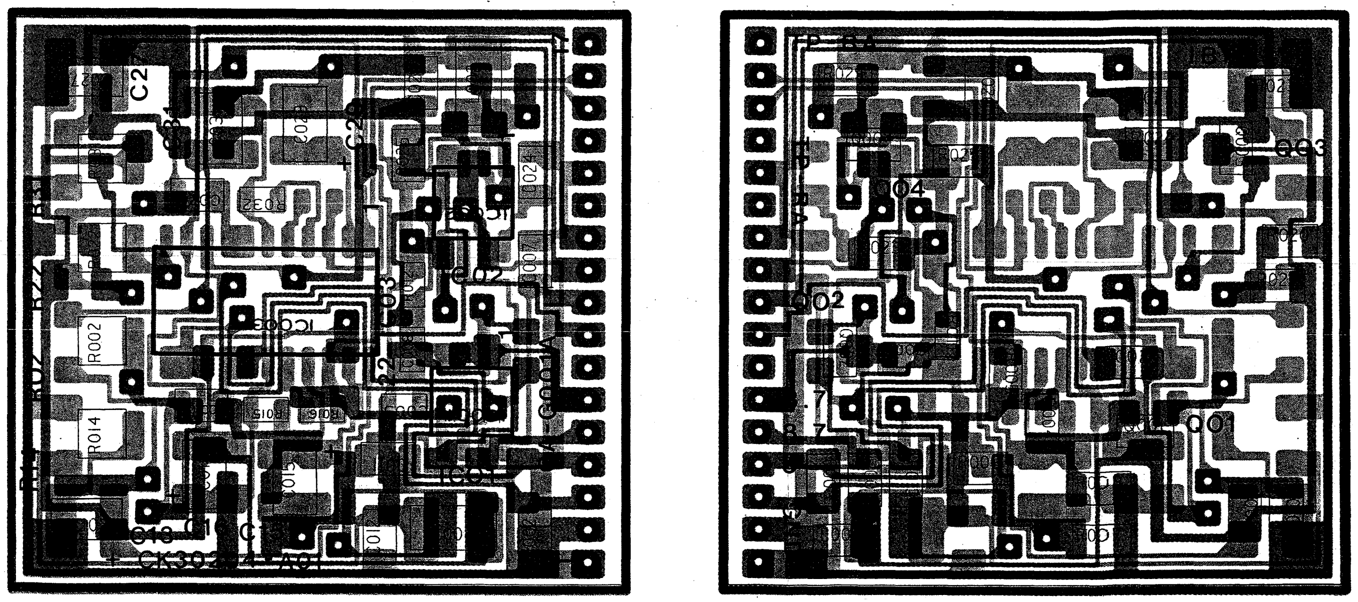

Q04
CA-F001A
CA-F011A

TOP VIEW

BOTTOM VIEW

15-2 BOARD DIAGRAM OF CDP BOARD Ⓖ

- CA-G001A

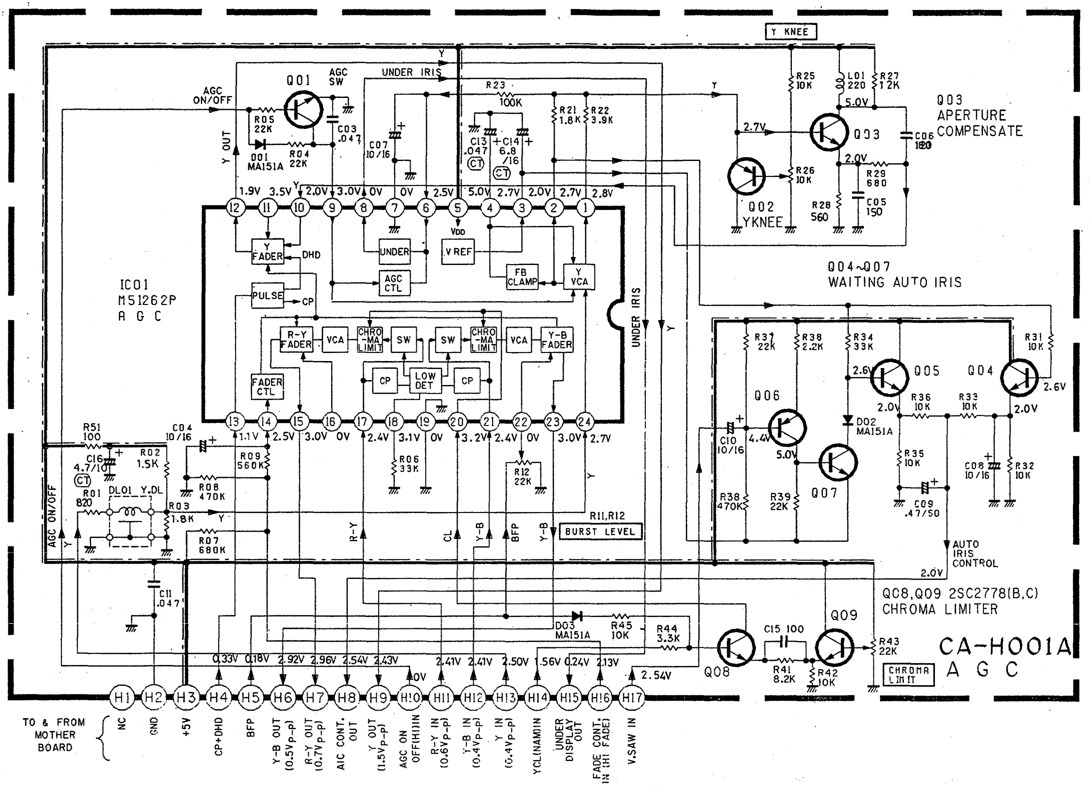

R002
R014
Q02
Q03
Q04
Q01

TOP VIEW

BOTTOM VIEW

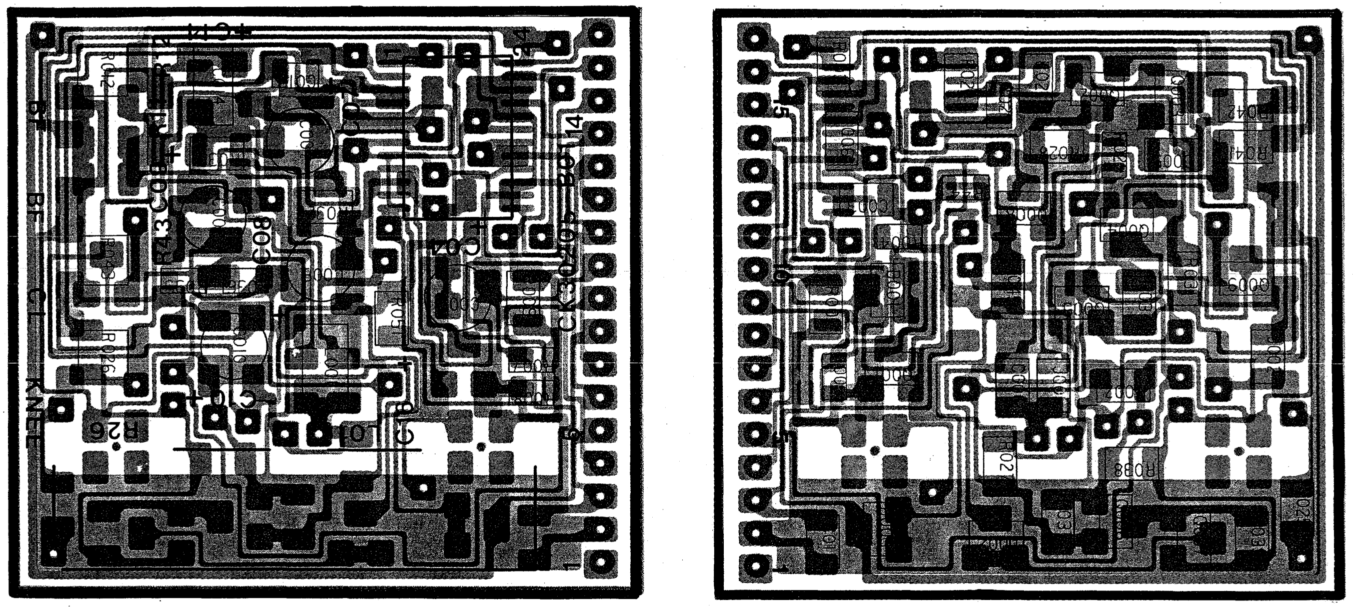
16-1 CIRCUIT DIAGRAM OF AGC BOARD Ⓗ

- CA-H001A


IC01
M51262P
AGC
Q01 AGC SW
Q02 YKNEE
Q03 APERTURE COMPENSATE
Q04~Q07 WAITING AUTO IRIS
Q08,Q09 2SC2778(B,C) CHROMA LIMITER
Y KNEE
BURST LEVEL
AUTO IRIS CONTROL
CHROMA LIMIT
CA-H001A
A G C
H1 H2 H3 H4 H5 H6 H7 H8 H9 H10 H11 H12 H13 H14 H15 H16 H17
TO & FROM MOTHER BOARD
NC
GND
+5V
CP+DHD
BFP
Y-B OUT (0.5Vp-p)
R-Y OUT (0.7Vp-p)
AIC CONT. OUT
Y OUT (1.5Vp-p)
AGC ON OFF(H)IN
R-Y IN (0.6Vp-p)
Y-B IN (0.4Vp-p)
Y IN (0.4Vp-p)
YCL(NAM)IN
UNDER DISPLAY OUT
FADE CONT. IN (H: FADE)
V.SAW IN

16-2 BOARD DIAGRAM OF AGC BOARD Ⓗ

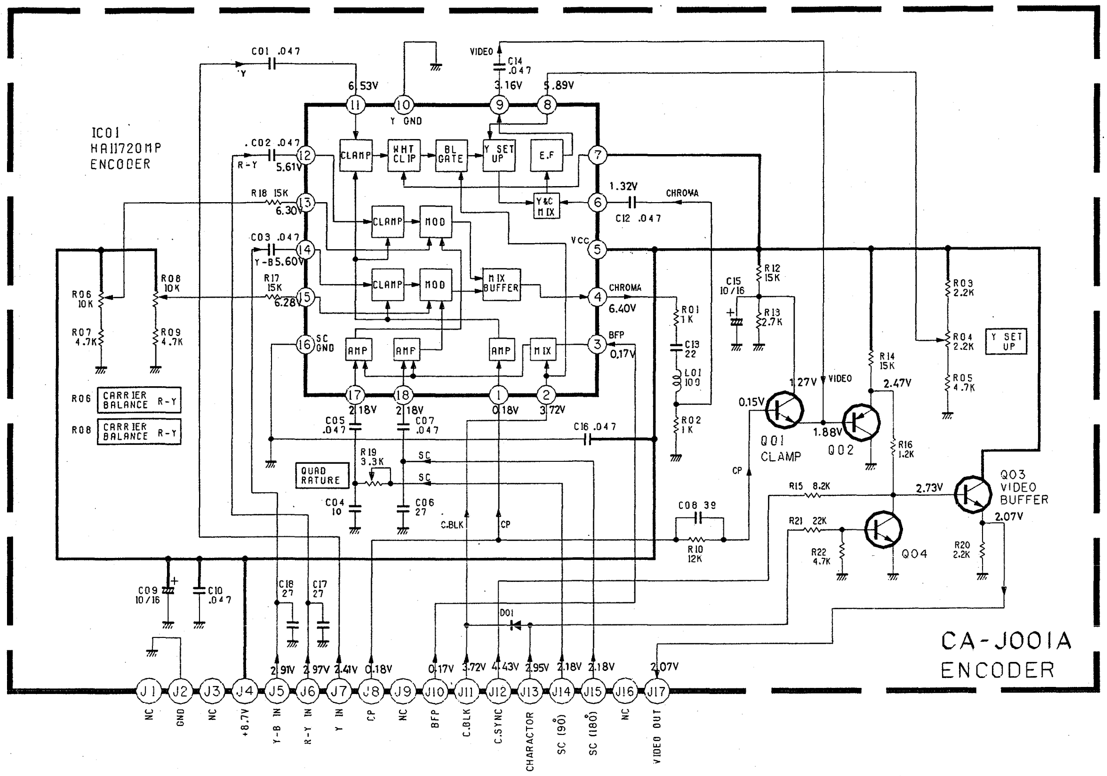
- CA-H001A



TOP VIEW BOTTOM VIEW

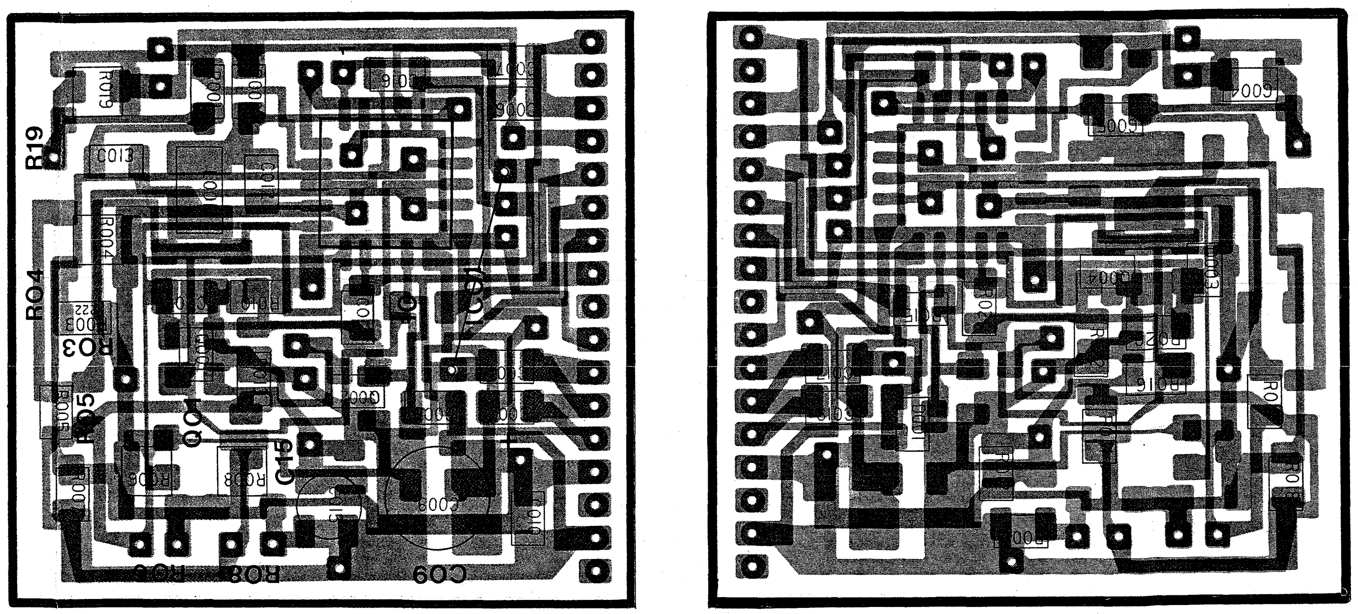
17-1 CIRCUIT DIAGRAM OF ENCODER BOARD Ⓙ

- CA-J001A


IC01
HA11720MP
ENCODER
CLAMP
WHT CLIP
BL GATE
Y SET UP
E.F
Y&C MIX
MOD
MIX BUFFER
AMP
MIX
CARRIER BALANCE R-Y
CARRIER BALANCE B-Y
QUAD RATURE
Q01 CLAMP
Q02
Q03 VIDEO BUFFER
Q04
CA-J001A
ENCODER
J1 J2 J3 J4 J5 J6 J7 J8 J9 J10 J11 J12 J13 J14 J15 J16 J17
NC
GND
NC
+8.7V
Y-B IN
R-Y IN
Y IN
CP
NC
BFP
C.BLK
C.SYNC
CHARACTOR
SC (90̊)
SC (180̊)
NC
VIDEO OUT

17-2 BOARD DIAGRAM OF ENCODER BOARD Ⓙ

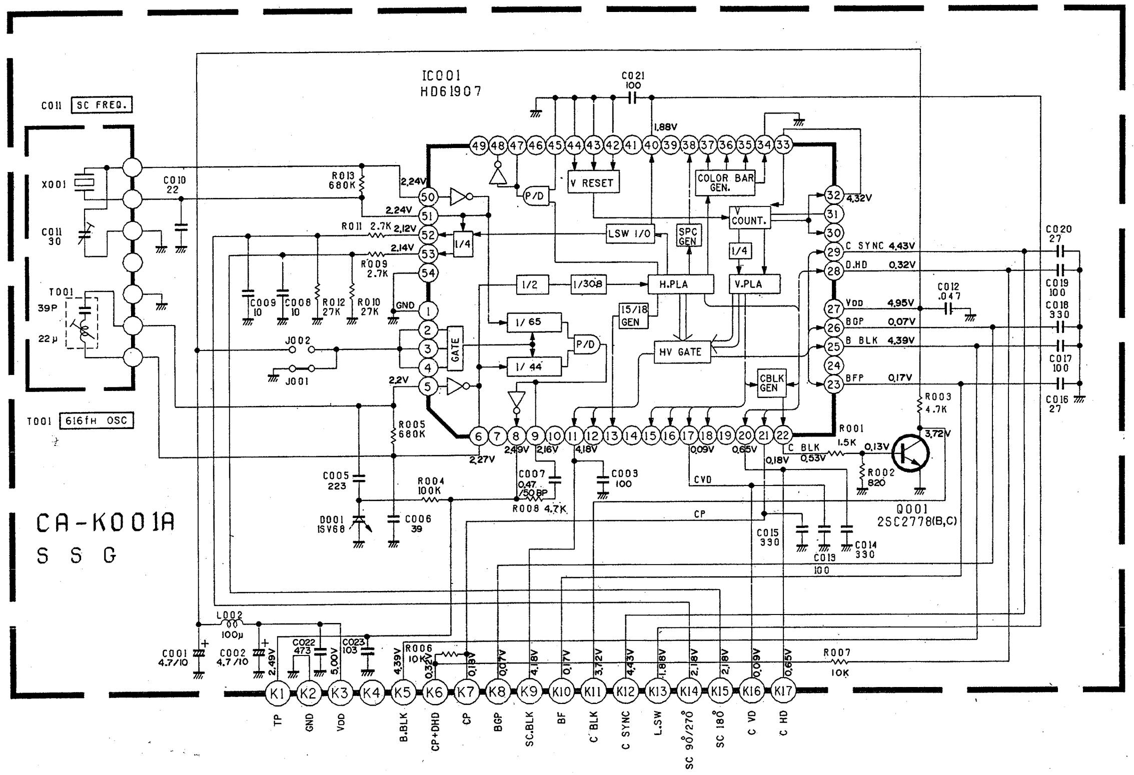
- CA-J001A



TOP VIEW BOTTOM VIEW

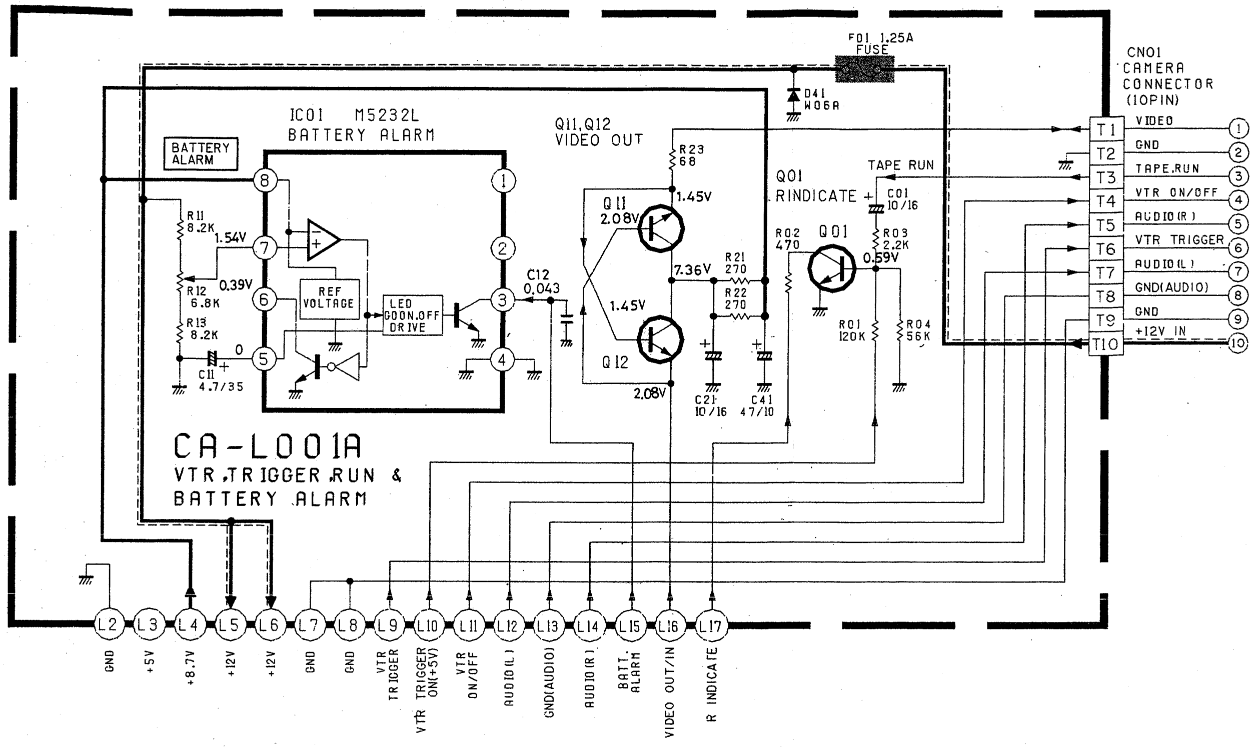
18-1 CIRCUIT DIAGRAM OF SSG BOARD Ⓚ

- CA-K001A


IC001
H061907
C011 SC FREQ.
X001
C010 22
C011 30
T001
39P
22μ
T001 616fH OSC
R013 680K
R011 2.7K
R009 2.7K
C009 10
C008 10
R012 27K
R010 27K
J002
J001
V RESET
COLOR BAR GEN.
LSW I/O
SPC GEN
COUNT.
H.PLA
V.PLA
MV GATE
CBLK GEN
GATE
P/D
1/2
1/308
1/65
1/44
15/18 GEN
C SYNC 4.43V
D.HD 0.32V
VDD 4.95V
BGP 0.07V
B BLK 4.39V
BFP 0.17V
R003 4.7K
R001 1.5K
R002 820
Q001 2SC2778(B,C)
R005 680K
C005 223
R004 100K
C007 0.47 50μ
R006 4.7K
D001 1SV68
C006 39
C003 100
C015 330
C019 100
C014 330
C020 27
C019 100
C018 330
C017 100
C016 27
C012 .047
C021 100
L002 100μ
C001 4.7/10
C002 4.7/10
C022 473
C023 103
R006 10K
R007 10K
CA-K001A
SSG
K1 TP
K2 GND
K3 VDD
K4
K5 B.BLK
K6 CP+DHD
K7 CP
K8 BGP
K9 SC.BLK
K10 BF
K11 C BLK
K12 C SYNC
K13 L.SW
K14 SC 90/270
K15 SC 180
K16 C VD
K17 C HD

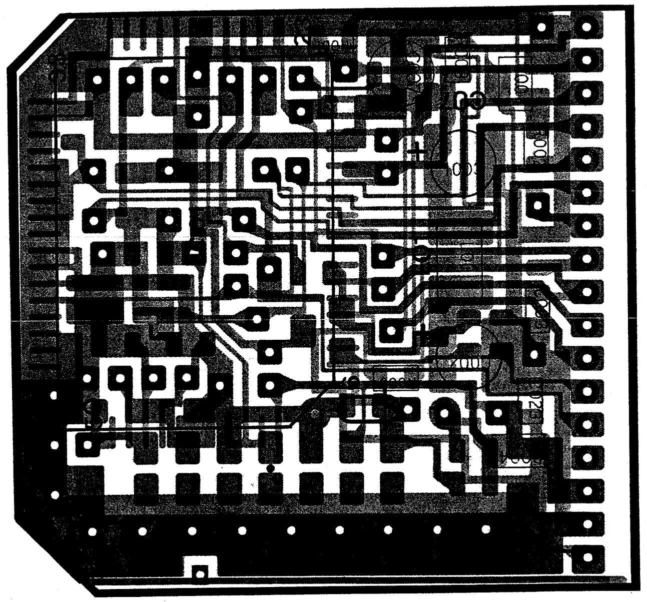
19-1 CIRCUIT DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ

- CA-L001A

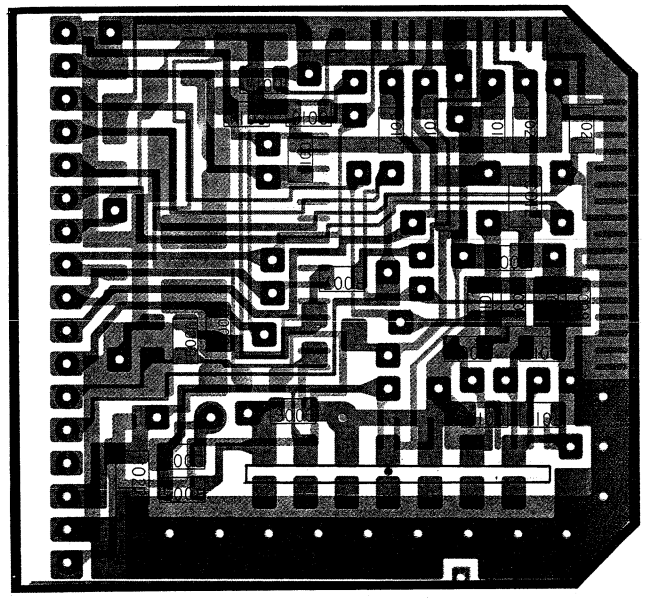

F01 1.25A FUSE
D41 HO6A
CN01 CAMERA CONNECTOR (10PIN)
IC01 M5232L
BATTERY ALARM
Q11,Q12 VIDEO OUT
R11 8.2K
R12 6.8K
R13 8.2K
C11 4.7/35
REF VOLTAGE
LED DOON.OFF DRIVE
C12 0.043
Q11
Q12
R23 68
Q01 RINDICATE
TAPE RUN
C01 10/16
R02 470
Q01
R03 2.2K
R21 270
R22 270
R01 120K
R04 56K
C21 10/16
C41 47/10
T1 VIDEO
T2 GND
T3 TAPE.RUN
T4 VTR ON/OFF
T5 AUDIO(R)
T6 VTR TRIGGER
T7 AUDIO(L)
T8 GND(AUDIO)
T9 GND
T10 +12V IN
CA-L001A
VTR TRIGGER RUN & BATTERY ALARM
L2 GND
L3 +5V
L4 +8.7V
L5 +12V
L6 +12V
L7 GND
L8 GND
L9 VTR TRIGGER
L10 VTR TRIGGER ON(+5V)
L11 VTR ON/OFF
L12 AUDIO(L)
L13 GND(AUDIO)
L14 AUDIO(R)
L15 BATT. ALARM
L16 VIDEO OUT/IN
L17 R INDICATE

18-2 BOARD DIAGRAM OF SSG BOARD Ⓚ

- CA-K001A



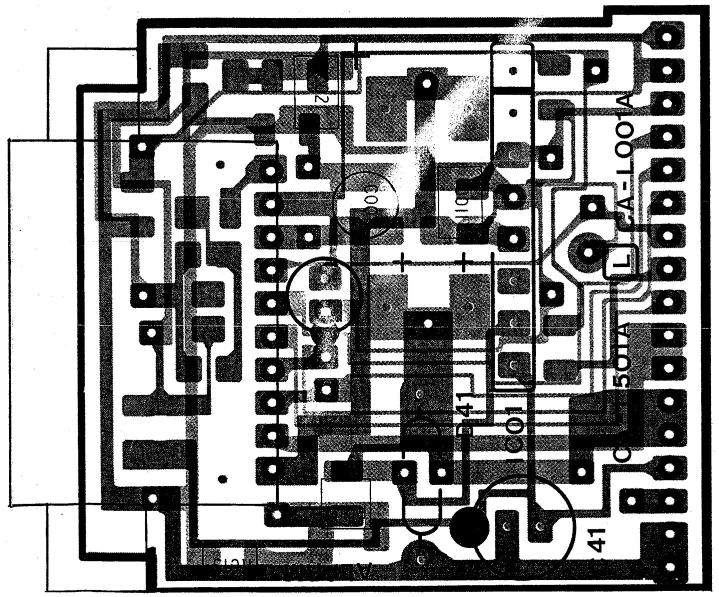
TOP VIEW



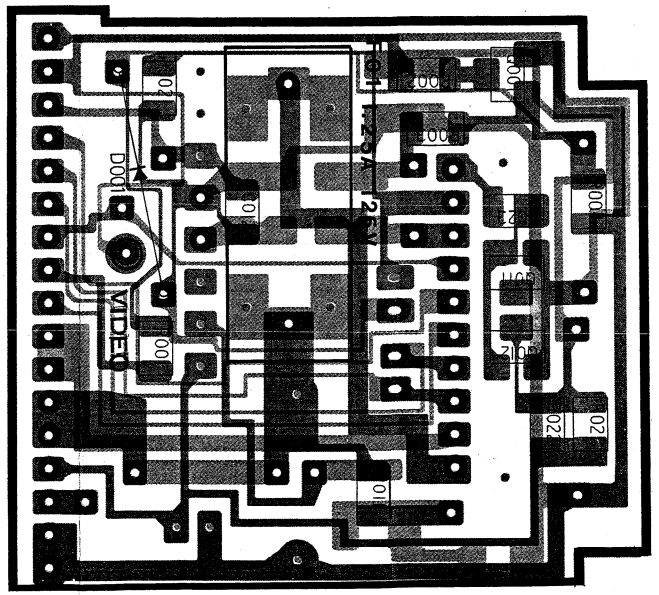
BOTTOM VIEW

19-2 BOARD DIAGRAM OF VTR TRIGGER, RUN & BATTERY ALARM BOARD Ⓛ

- CA-L001A



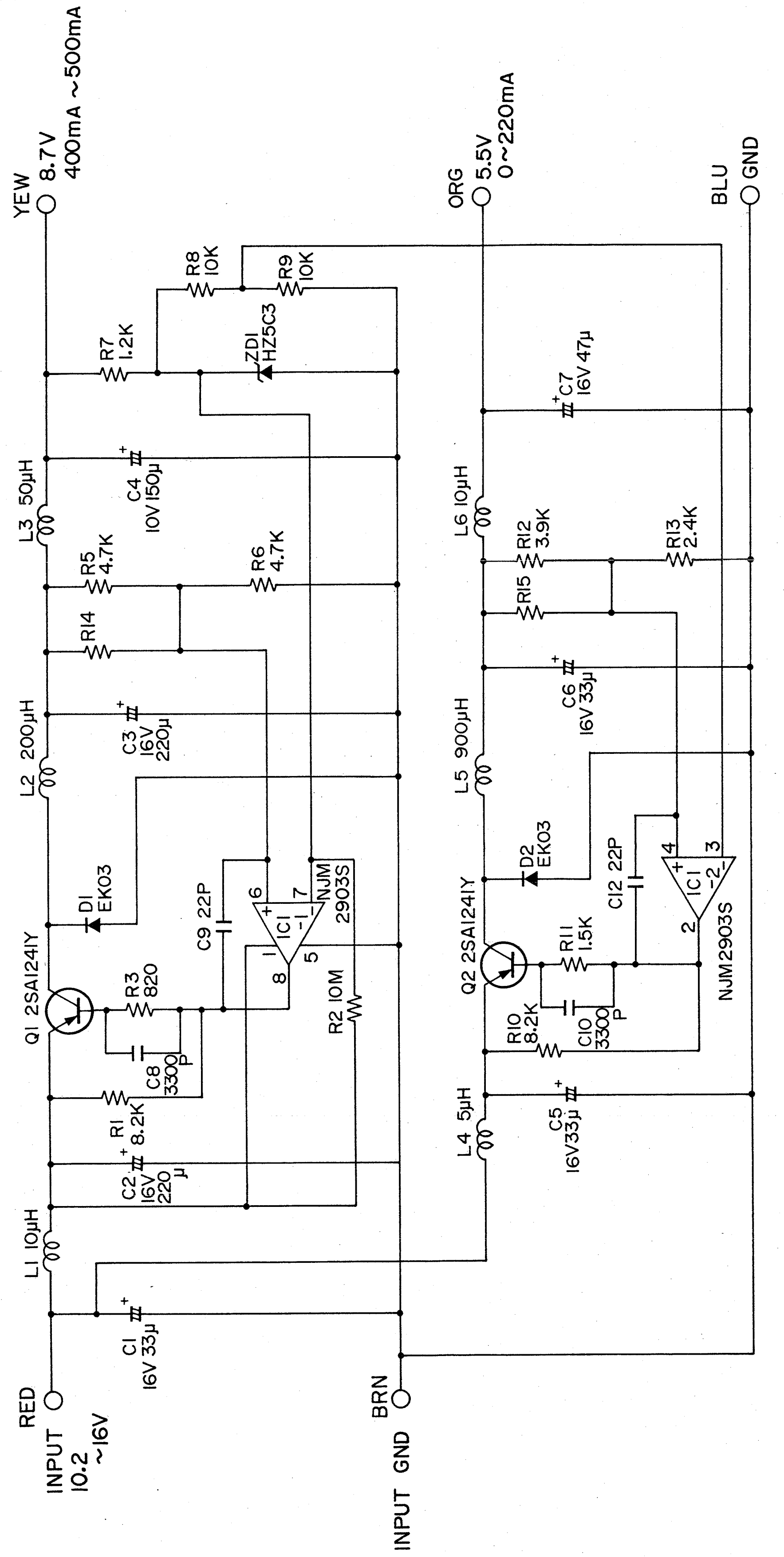
TOP VIEW



BOTTOM VIEW

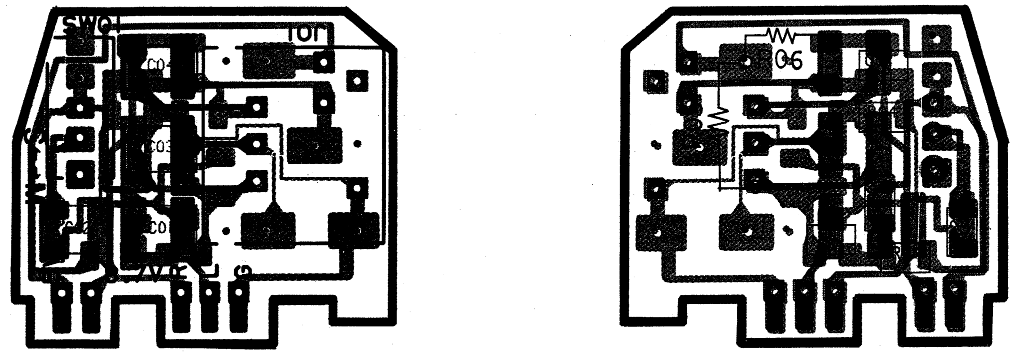
20 CIRCUIT DIAGRAM OF SW. REGULATOR

- CE40687-00A

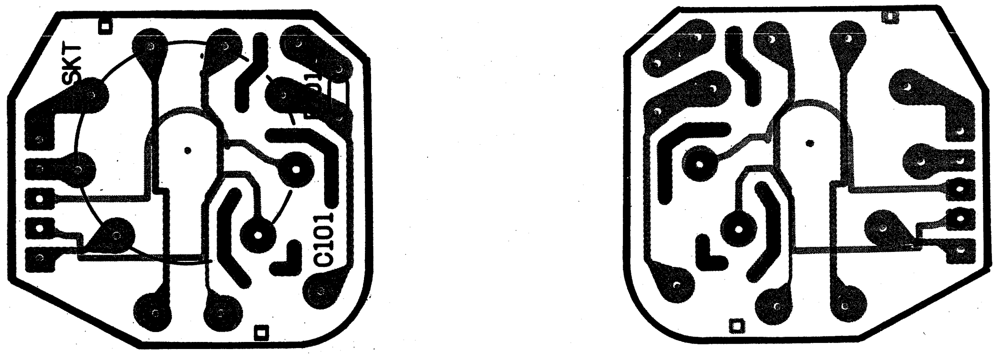

YEW
8.7V
400mA ~500mA
ORG
5.5V
0~220mA
BLU
GND
R8 10K
R9 10K
R7 1.2K
ZD1 HZ5C3
C7 16V 47μ
L3 50μH
C4 10V150μ
L6 10μH
R12 3.9K
R13 2.4K
R5 4.7K
R6 4.7K
R15
R14
C6 16V33μ
L2 200μH
C3 16V 220μ
L5 900μH
D2 EK03
C12 22P
IC1-2
NJM2903S
D1 EK03
C9 22P
IC1-1
NJM 2903S
Q1 2SA1241Y
R3 820
C8 3300P
R2 10M
Q2 2SA1241Y
R11 1.5K
R10 8.2K
C10 3300P
R1 8.2K
C2 16V 220μ
L4 5μH
C5 16V33μ
L1 10μH
C1 16V 33μ
RED
INPUT 10.2 ~16V
BRN
INPUT GND

21 BOARD DIAGRAM OF MIC BOARD

- CA-M001A

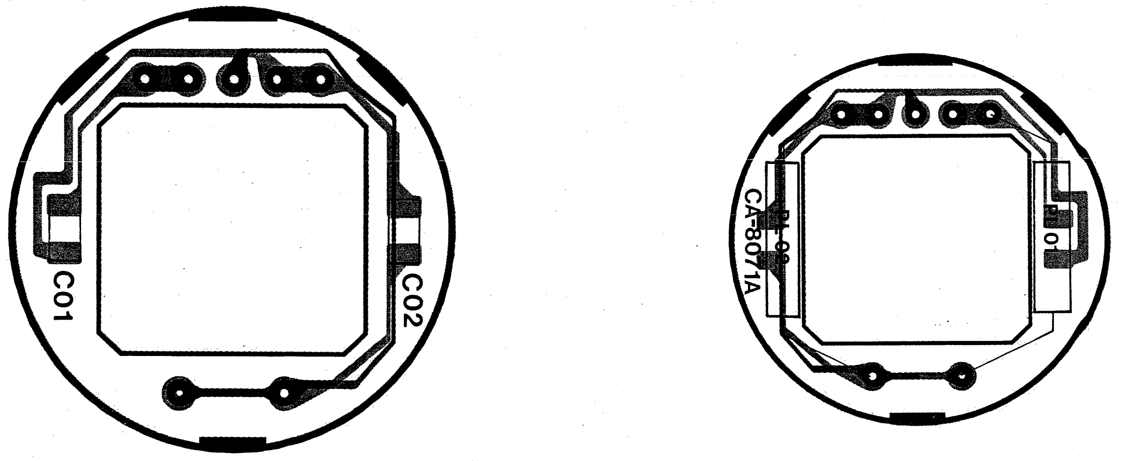

TOP VIEW BOTTOM VIEW

22 BOARD DIAGRAM OF TUBE SOCKET BOARD


TUBE SIDE BOTTOM SIDE

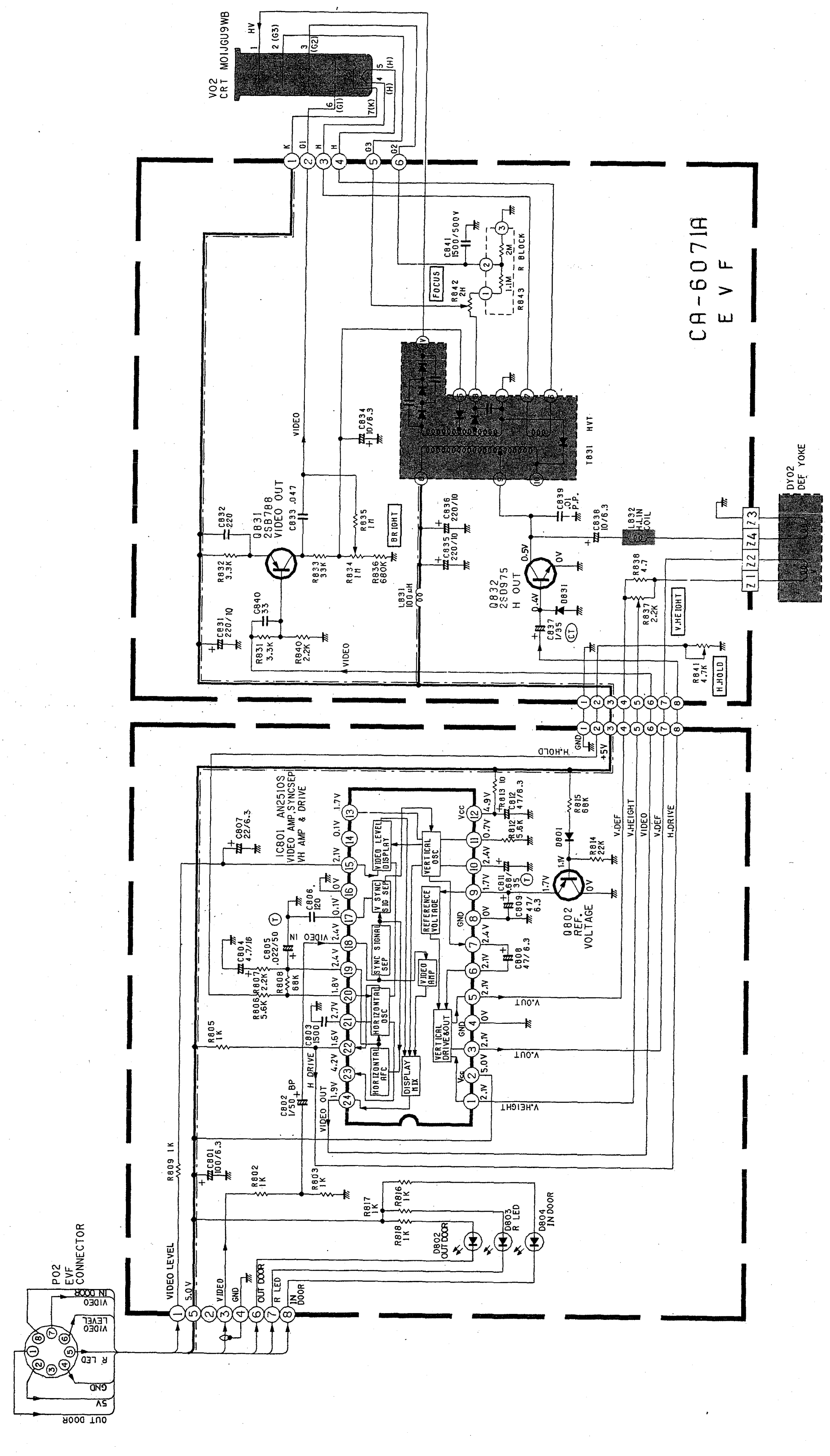
23 BOARD DIAGRAM OF BIAS LIGHT BOARD

- CA-8071A


C01
C02
CA-8071A
TOP VIEW BOTTOM VIEW

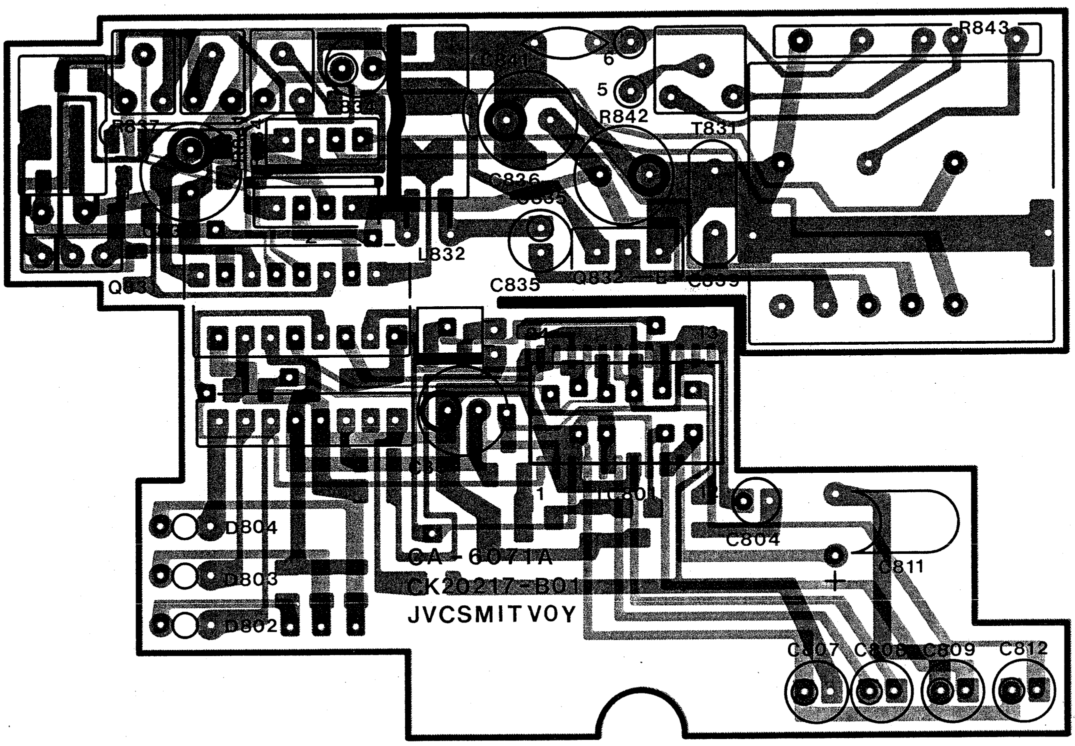
24-1 CIRCUIT DIAGRAM OF EVF

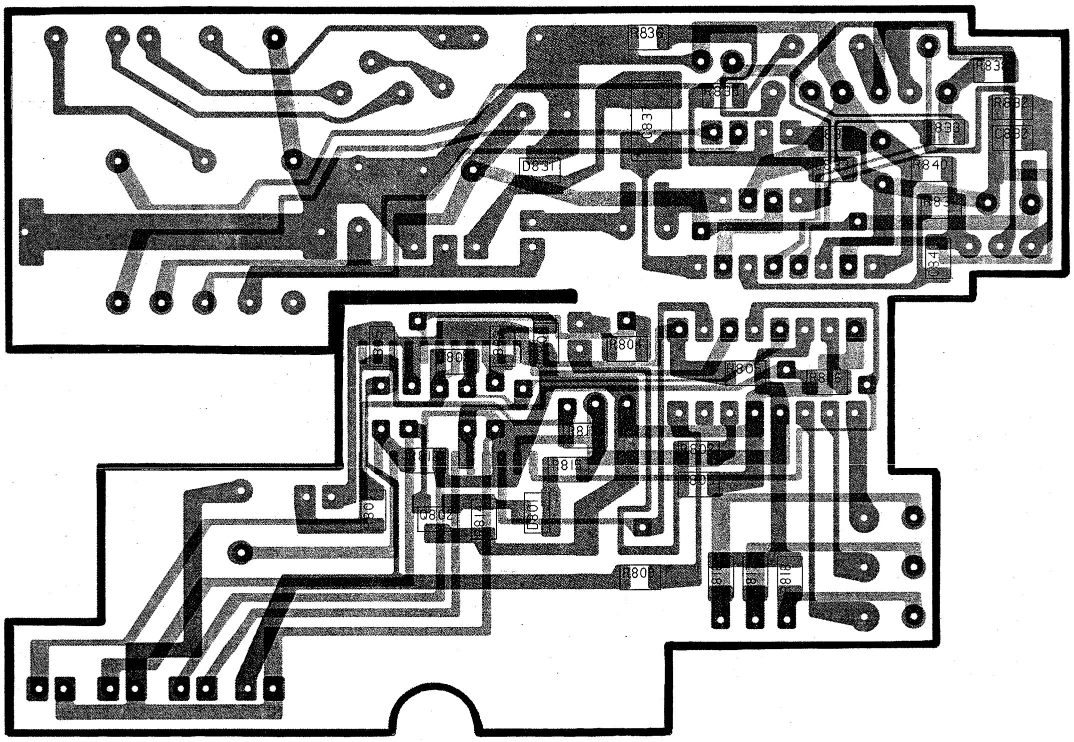
- CA-6071A


V02 CRT M01JGU9WB
CA-6071A EVF
T831 HVT
FOCUS
R842 2M
C841 1500/500V
R843 R BLOCK
Q831 2SB788 VIDEO OUT
BRIGHT
L831 100μH
Q832 2SD975 H OUT
L832 H.LIN COIL
DY02 DEF YOKE
V.HEIGHT
H.HOLD
IC801 AN2510S VIDEO AMP,SYNCSEP V/H AMP & DRIVE
VIDEO LEVEL DISPLAY
VERTICAL OSC
SYNC SIG SEP
REFERENCE VOLTAGE
SYNC SIGNAL SEP
VIDEO AMP
HORIZONTAL OSC
VERTICAL DRIVE&OUT
HORIZONTAL AFC
DISPLAY MIX
Q802 REF. VOLTAGE
D802 OUT DOOR
D803 R LED
D804 IN DOOR
P02 EVF CONNECTOR
VIDEO LEVEL
5.0V
VIDEO
GND
OUT DOOR
R LED
IN DOOR
5V
V.DEF
V.HEIGHT
H.DRIVE
V.OUT
+5V

24-2 BOARD DIAGRAM OF EVF

- **CA-6071A**


R843
6
5
R842
T831
C836
L832
C835
D804
D803
D802
C804
C811
C807
C808
C809
C812
CA-6071A
CK20217-B01
JVCSMITVOY


R836
R838
D831
R840
R808
D801
C802

BOTTOM VIEW

25 CIRCUIT DIAGRAM OF GX-N4U/UT

Components of **GX-N4U/UT** differ very little from those of **GX-N7U/UT**.
By referring to the following Table, use the components of **GX-N7U/UT** when they are mutually identical between the two models.

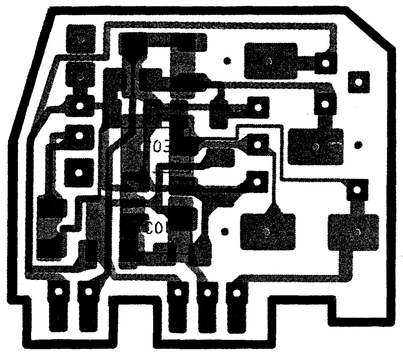
- **Boards employed on GX-N7U/UT and GX-N4U/UT**

Names of board modules and other components	BOARD NO.		REMARKS
	GX-N7U/UT	GX-N4U/UT	
MOTHER BOARD	**CA-1071A**	**CA-1073A**	See P. 35 ~ P. 38
PRE-AMP.	CA-2071A	CA-2071A	
AUDIO BOARD	**CA-A001A**	**CA-A002A**	See P. 39
PRE-PROCESS BOARD	CA-B001A	CA-B001A	
CARRIER MATRIX BOARD	CA-C001A	CA-C001A	
DETECTOR BOARD	CA-D001A	CA-D001A	
BLACK SET/ AUTO WHITE BOARD	**CA-E001A**	**CA-E003A**	See P. 40
COLOR γ BOARD	CA-F001A	CA-F001A	
CDP BOARD	CA-G001A	CA-G001A	
AGC BOARD	CA-H001A	CA-H001A	
ENCODER BOARD	CA-J001A	CA-J001A	
SSG BOARD	CA-K001A	CA-K001A	
VTR TRIGGER, RUN & BATTERY ALARM BOARD	CA-L001A	CA-L001A	
MIC BOARD	**CA-M001A**	**CA-M002A**	See P. 32
SW. REGULATOR	CE40687-00A	CE40687-00A	
EVF	CA-6071A	CA-6071A	
LENS	**CLC02206-A-BFZ**	**CLC03206-A-B**	

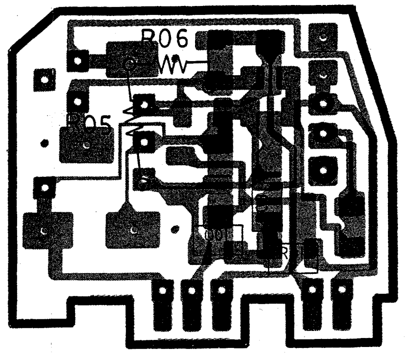
As to board modules that differ from those of **GX-N7U/UT**, refer to those pages indicated in the "REMARKS" column.

26 BOARD DIAGRAM OF MIC BOARD

- **CA-M002A**



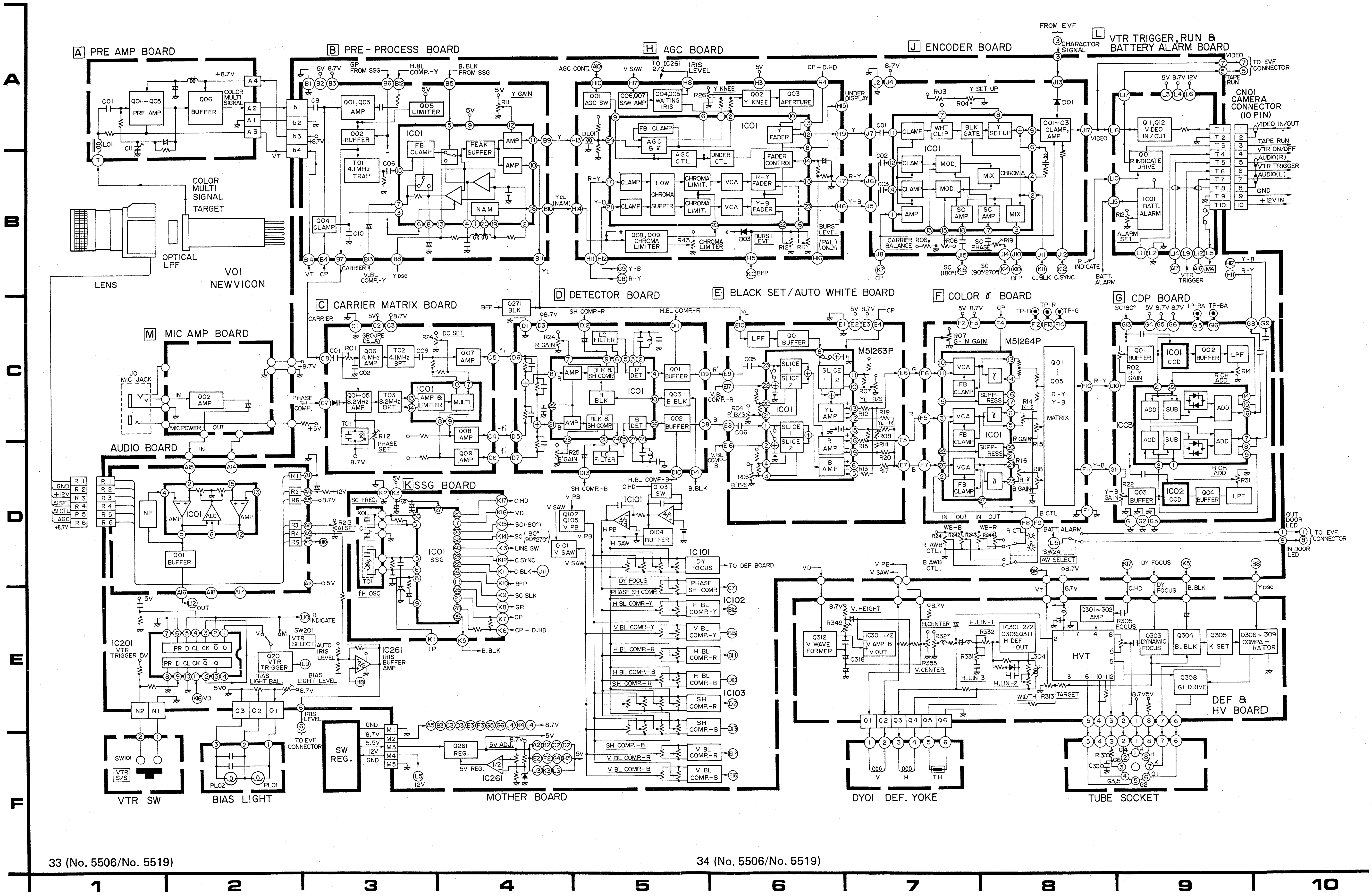
TOP VIEW



BOTTOM VIEW

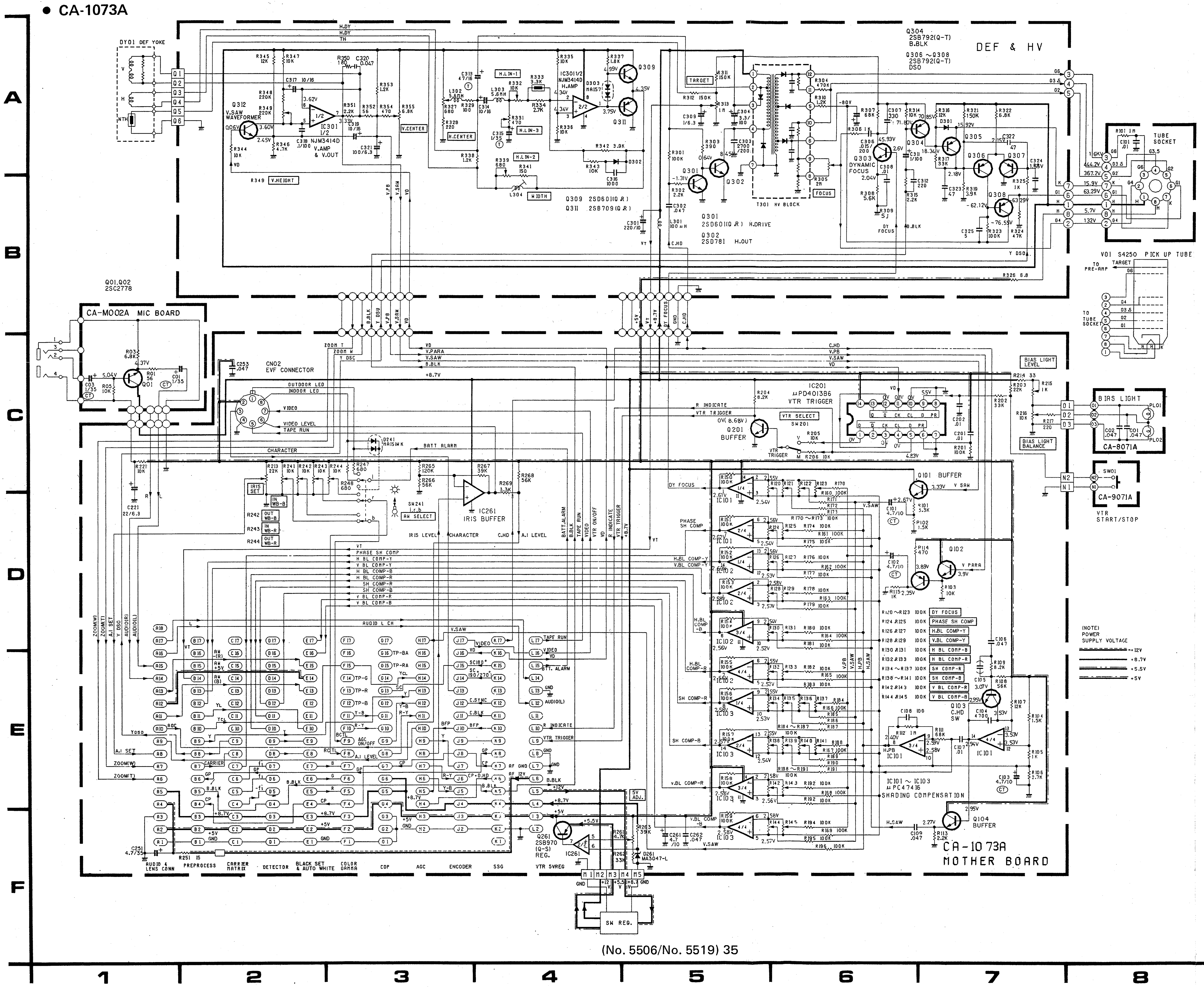
*** As to the circuit diagram, refer to the "Circuit diagram of mothe board (CA-1073A)."**

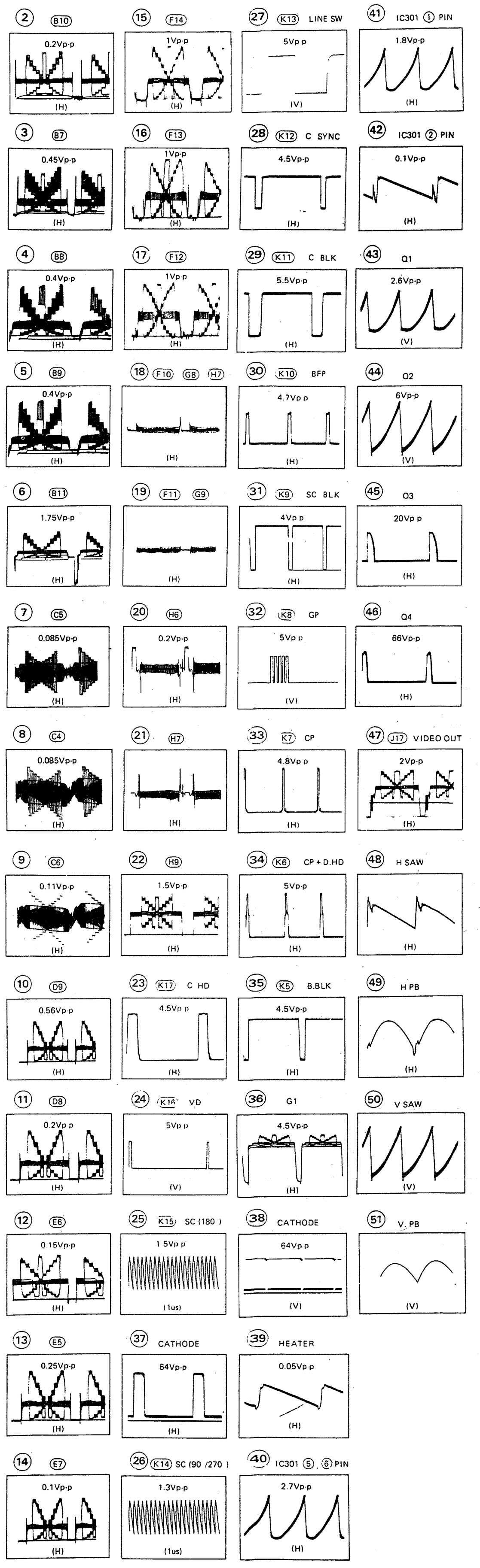
27 BLOCK DIAGRAM OF MAIN CIRCUIT (GX-N4U/UT)


A PRE AMP BOARD
B PRE-PROCESS BOARD
H AGC BOARD
J ENCODER BOARD
L VTR TRIGGER, RUN & BATTERY ALARM BOARD
FROM EVF
CHARACTOR SIGNAL
CN01 CAMERA CONNECTOR (10 PIN)
VIDEO IN/OUT
TAPE RUN
VTR ON/OFF
AUDIO(R)
VTR TRIGGER
AUDIO(L)
GND
+12V IN
TO EVF CONNECTOR
COLOR MULTI SIGNAL
TARGET
OPTICAL LPF
V01 NEWVICON
LENS
C CARRIER MATRIX BOARD
D DETECTOR BOARD
E BLACK SET/AUTO WHITE BOARD
F COLOR γ BOARD
G CDP BOARD
M MIC AMP BOARD
J01 MIC JACK
AUDIO BOARD
K SSG BOARD
IC01 SSG
fH OSC
M51263P
M51264P
Q01 ~ Q05 R-Y Y-B MATRIX
IC261 IRIS BUFFER AMP
IC201 VTR TRIGGER
SW REG.
MOTHER BOARD
IC101
IC102
IC103
TO DEF BOARD
HVT
DEF & HV BOARD
OUT DOOR LED
IN DOOR LED
BATT. ALARM
SW241 AW SELECT
VTR SW
BIAS LIGHT
DY01 DEF. YOKE
TUBE SOCKET
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10

28-1 CIRCUIT DIAGRAM OF MOTHER BOARD (GX-N4U/UT)

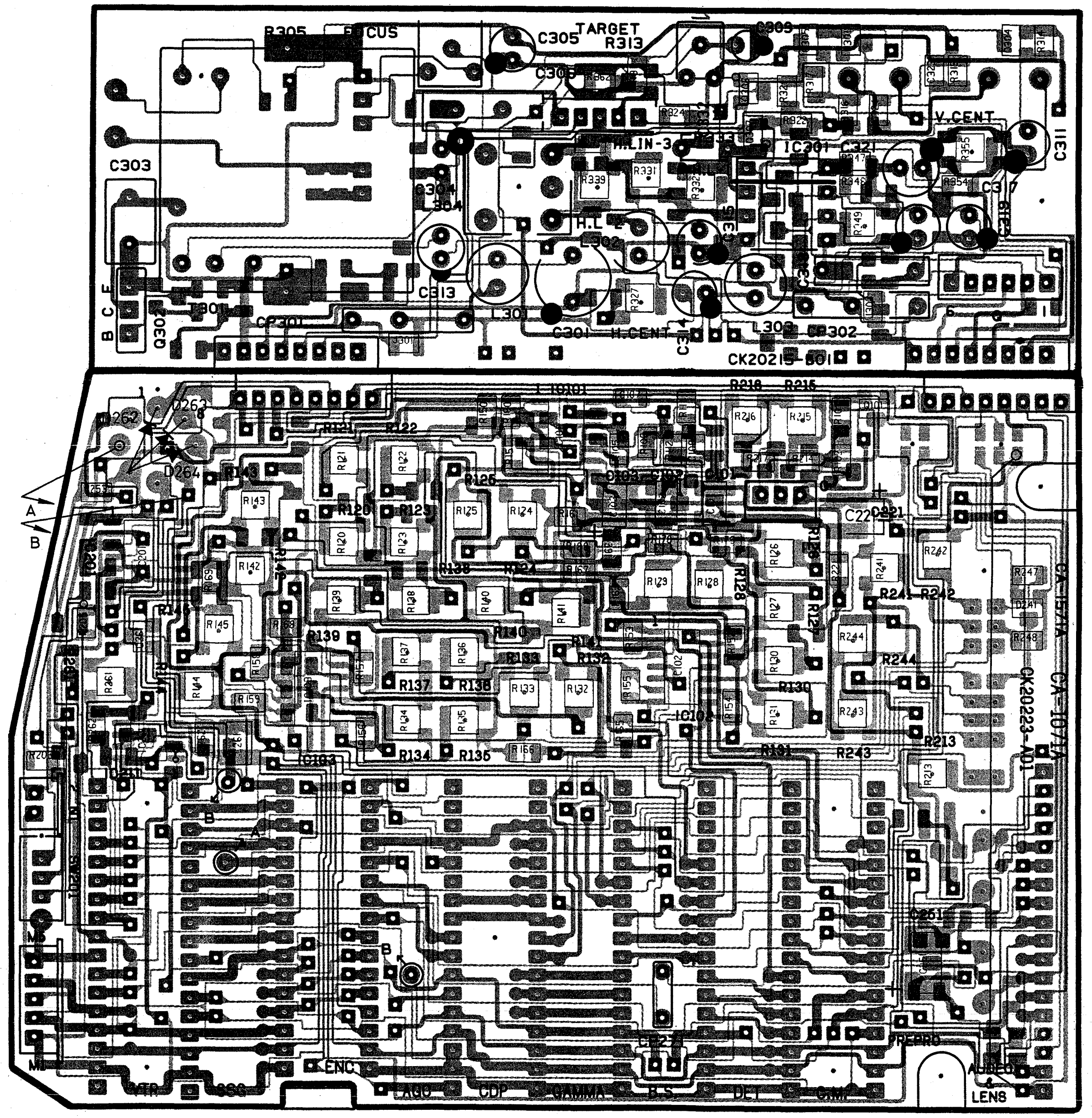
- CA-1073A

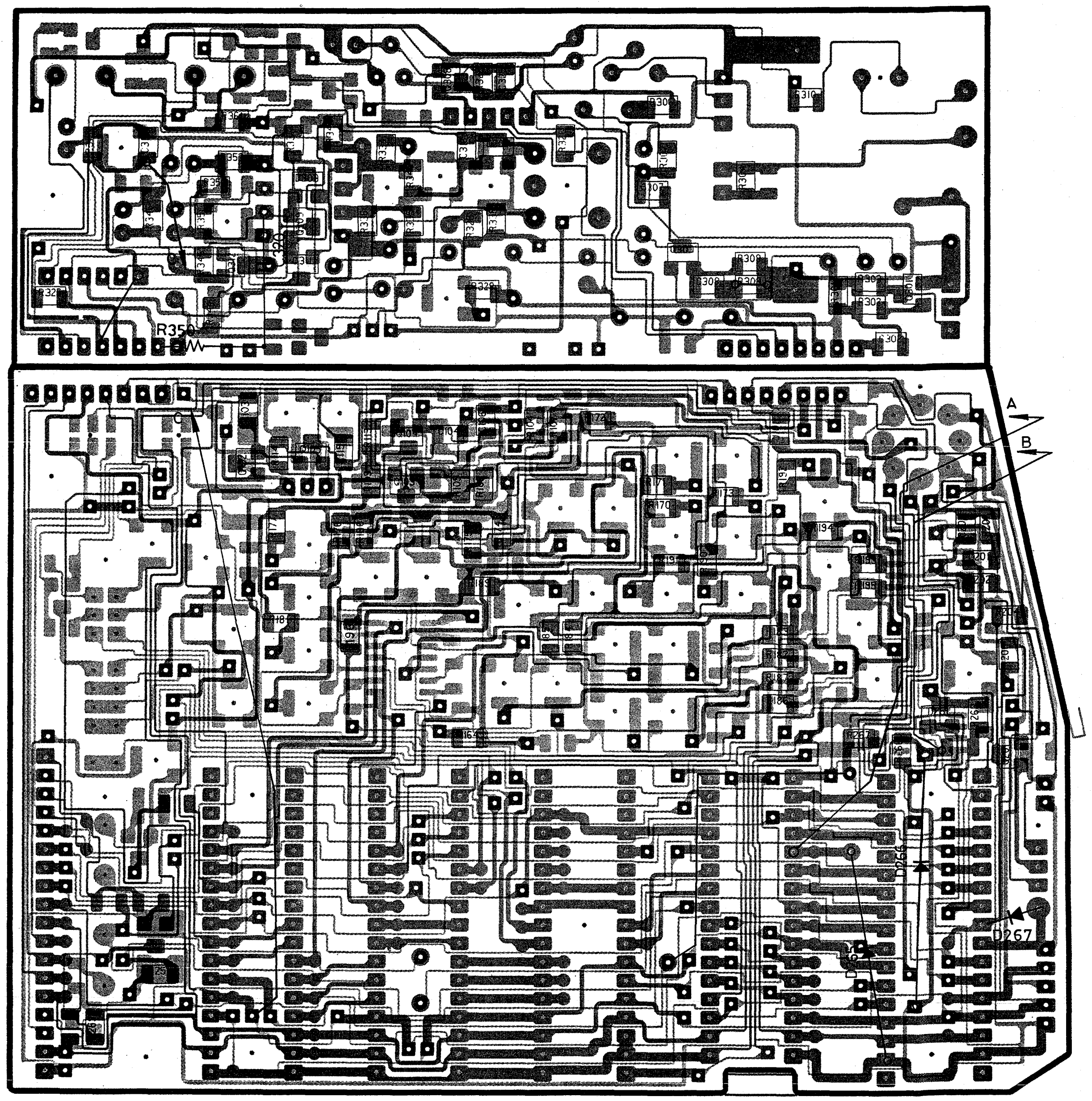

DEF & HV
DY01 DEF YOKE
Q312 V.SAW WAVEFORMER
IC301 1/2 NJM3414D V.AMP & V.OUT
IC301 2/2 NJM3414D H.AMP
V.HEIGHT
H.CENTER
V.CENTER
H.LIN-1
H.LIN-2
H.LIN-3
WIDTH
Q309 2SD601(Q.R)
Q311 2SB709(Q.R)
TARGET
Q301 2SD601(Q.R) H.DRIVE
Q302 2SD781 H.OUT
T301 HV BLOCK
Q303 DYNAMIC FOCUS
FOCUS
Q304 2SB792(Q-T) B.BLK
Q306 ~ Q308 2SB792(Q-T) DSO
TUBE SOCKET
V01 S4250 PICK UP TUBE
TO PRE-AMP
TO TUBE SOCKET
Q01,Q02 2SC2778
CA-M002A MIC BOARD
CN02 EVF CONNECTOR
OUTDOOR LED
INDOOR LED
VIDEO
VIDEO LEVEL
TAPE RUN
CHARACTER
BATT ALARM
IRIS SET
D241 MA151WK
IC261 IRIS BUFFER
SW241 i.r.b
AW SELECT
IRIS LEVEL
A.I LEVEL
IC201 μPD4013B6 VTR TRIGGER
Q201 BUFFER
VTR SELECT
SW201
BIAS LIGHT LEVEL
BIAS LIGHT BALANCE
BIAS LIGHT
CA-8071A
SW01
CA-9071A
VTR START/STOP
DY FOCUS
PHASE SH COMP
H.BL COMP-Y
V.BL COMP-Y
H.BL COMP-B
H.BL COMP-R
SH COMP-R
SH COMP-B
V.BL COMP-R
V.BL COMP-B
Q101 BUFFER
Q102 V PARA
Q103 C.HD SW
Q104 BUFFER
IC101 ~ IC103 μPC4741G SHADING COMPENSATION
(NOTE) POWER SUPPLY VOLTAGE
+12V
+8.7V
+5.5V
+5V
AUDIO L CH
ZOOM(W)
ZOOM(T)
A.I SET
Y OSC
AUDIO(L)
AUDIO(R)
VIDEO
TAPE RUN
BATT. ALARM
AUDIO(L)
R INDICATE
VTR TRIGGER
Q261 2SB970 (Q-S) REG.
D261 MA3047-L
5V ADJ.
SW REG.
AUDIO & LENS CONN
PREPROCESS
CARRIER MATRIX
DETECTOR
BLACK SET & AUTO WHITE
COLOR GAMMA
CDP
AGC
ENCODER
SSG
VTR 5VREG
CA-1073A MOTHER BOARD
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10



28-2 BOARD DIAGRAM OF MOTHER BOARD

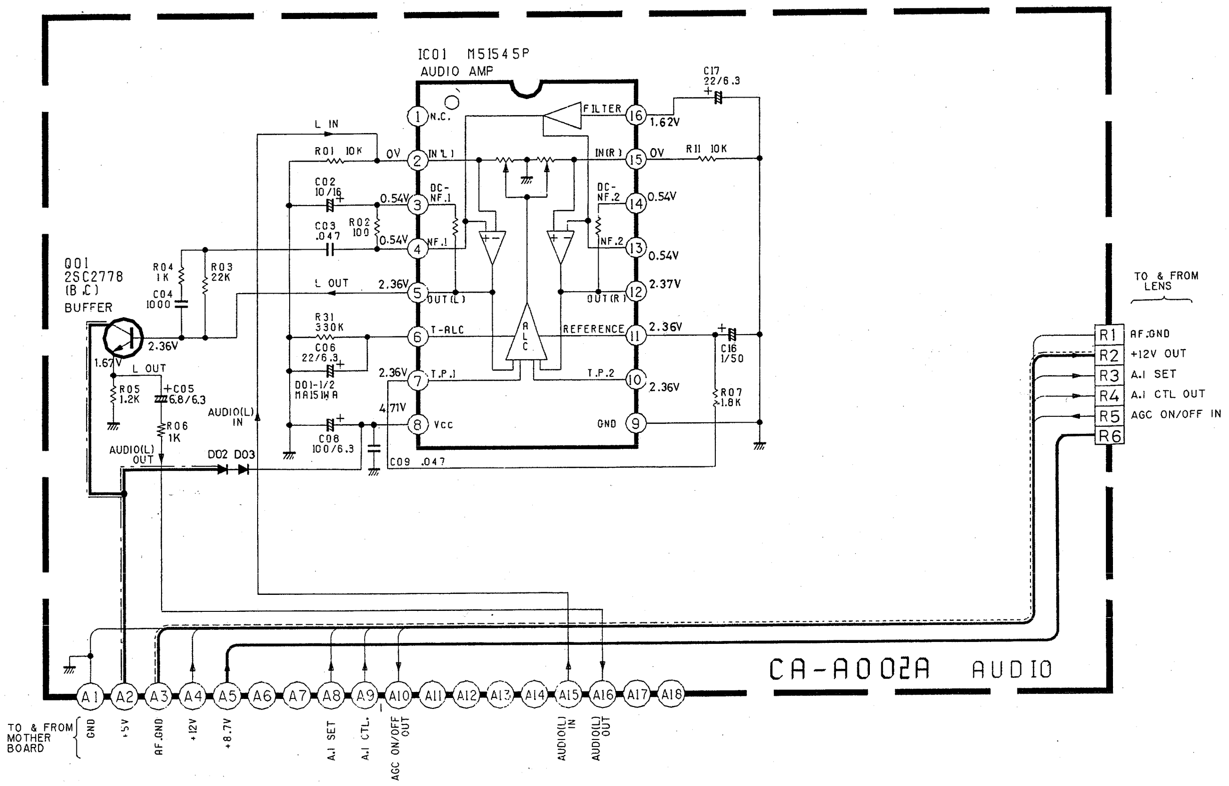
- CA-1073A


R305
FOCUS
C305
TARGET
R313
C303
C304
C313
C301
H.CENT
L302
C302
CK20215-501
H.LIN
V.CENT
IC301
R331
R339
R327
C311
A
B
D262
D263
D264
R121
R122
R125
R124
R120
R123
R126
R133
R143
R142
R145
R137
R138
R139
R134
R135
R132
R136
R141
R140
R128
R127
R129
R130
R131
R215
R216
R241
R242
R243
R244
R213
C221
IC101
IC102
IC103
CA-1074A
CK20223-101
ENC
AGC
CDP
GAMMA
B.S
DET
CAMP
LENS
C251
FRONT


FRONT
R350
A
B
D266
D267

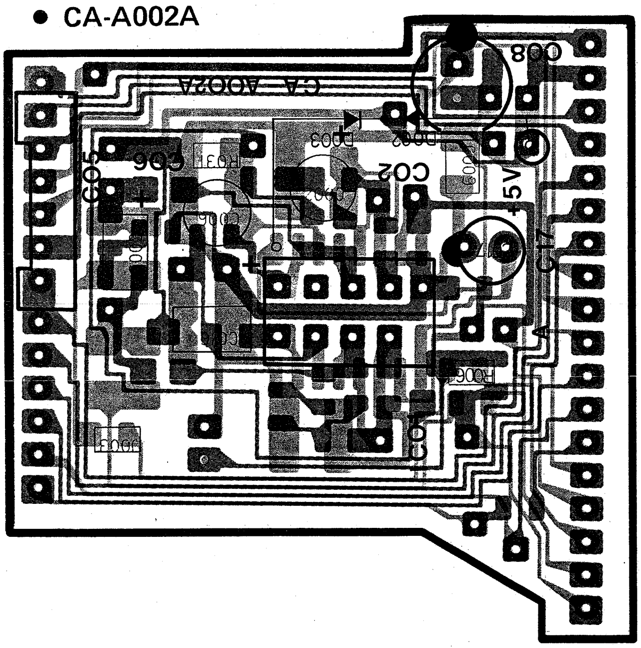
29-1 CIRCUIT DIAGRAM OF AUDIO BOARD Ⓐ

- CA-A002A

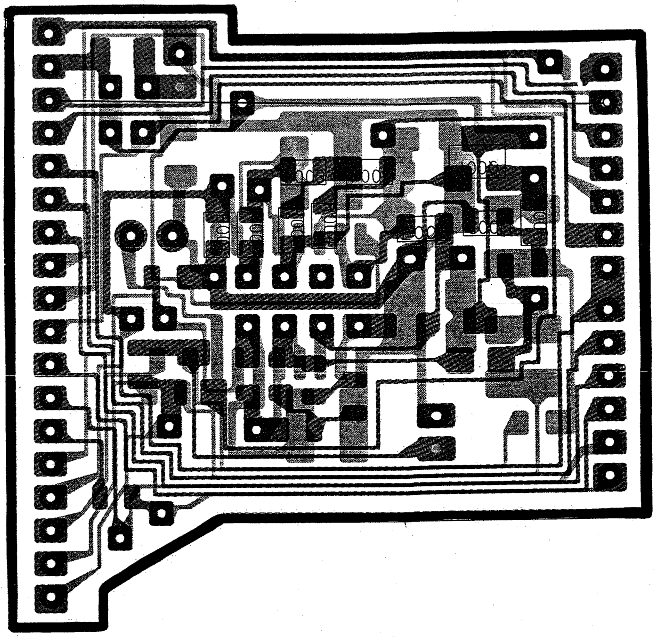

IC01 M51545P
AUDIO AMP
C17 22/6.3
N.C.
FILTER
1.62V
L IN
R01 10K
0V
IN(L)
IN(R)
R11 10K
C02 10/16
0.54V
DC-NF.1
DC-NF.2
C03 .047
R02 100
NF.1
NF.2
Q01 2SC2778 (B,C) BUFFER
R04 1K
R03 22K
C04 1000
L OUT
2.36V
OUT(L)
OUT(R)
2.37V
R31 330K
T-ALC
REFERENCE
C16 1/50
C06 22/6.3
D01-1/2 MA151WA
T.P.1
T.P.2
1.67V
R05 1.2K
C05 6.8/6.3
R06 1K
AUDIO(L) IN
AUDIO(L) OUT
4.71V
Vcc
GND
R07 1.8K
C08 100/6.3
C09 .047
D02 D03
TO & FROM LENS
R1 RF:GND
R2 +12V OUT
R3 A.I SET
R4 A.I CTL OUT
R5 AGC ON/OFF IN
R6
CA-A002A AUDIO
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18
TO & FROM MOTHER BOARD
GND
+5V
RF.GND
+12V
+8.7V
A.I SET
A.I CTL.
AGC ON/OFF OUT
AUDIO(L) IN
AUDIO(L) OUT

29-2 BOARD DIAGRAM OF AUDIO BOARD Ⓐ

- CA-A002A


CA-A002A
C08
D02
D03
C06
R31
C05
C02
5V
C17
R06
C09

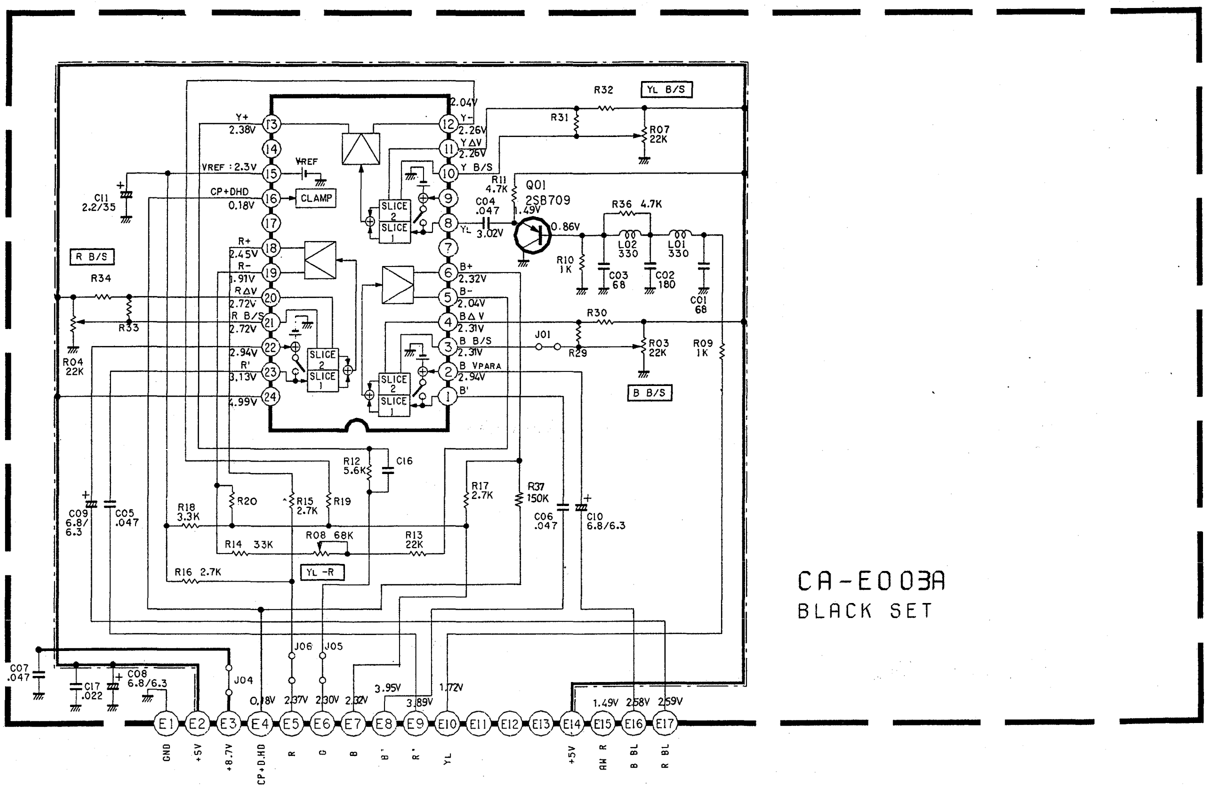
TOP VIEW



BOTTOM VIEW

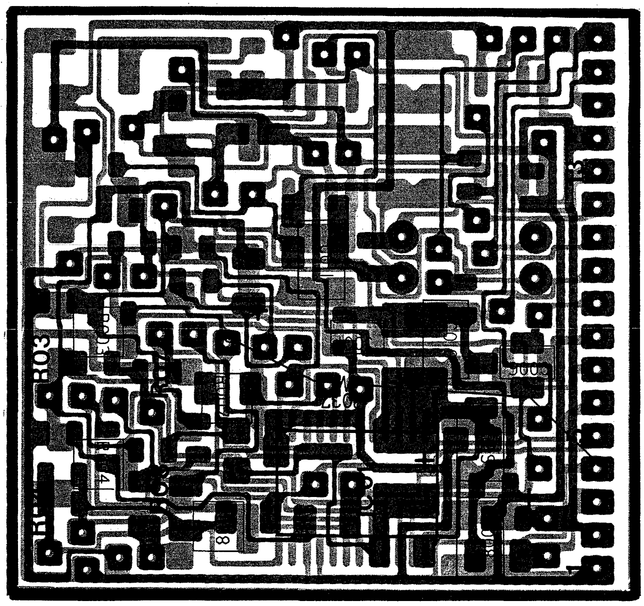
30-1 CIRCUIT DIAGRAM OF BLACK SET BOARD Ⓔ

- CA-E003A

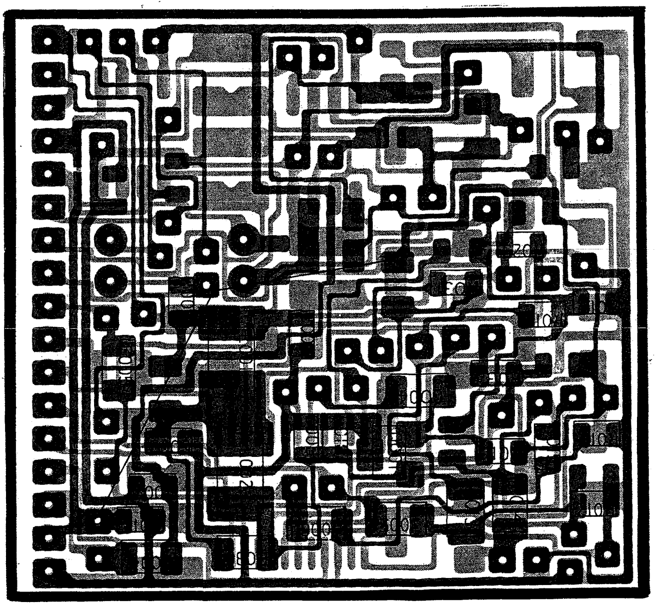

CA-E003A
BLACK SET
R32
YL B/S
R31
R07 22K
Y+ 2.38V
2.04V
Y- 2.26V
Y ΔV 2.26V
Y B/S
VREF : 2.3V
VREF
CP+DHD 0.18V
CLAMP
C11 2.2/35
SLICE 2
SLICE 1
R11 4.7K
Q01 2SB709
C04 .047
1.49V
YL 3.02V
0.86V
R36 4.7K
L02 330
L01 330
R10 1K
C03 68
C02 180
C01 68
R B/S
R34
R33
R04 22K
R+ 2.45V
R- 1.91V
R ΔV 2.72V
R B/S 2.72V
2.94V
R' 3.13V
4.99V
B+ 2.32V
B- 2.04V
B ΔV 2.31V
B B/S 2.31V
B VPARA 2.94V
B'
R30
J01
R29
R03 22K
R09 1K
B B/S
R12 5.6K
C16
R17 2.7K
R37 150K
C06 .047
C10 6.8/6.3
C09 6.8/6.3
C05 .047
R18 3.3K
R20
R15 2.7K
R19
R14 33K
R08 68K
R13 22K
R16 2.7K
YL -R
J06
J05
J04
C07 .047
C17 .022
C08 6.8/6.3
0.18V
2.37V
2.30V
2.32V
3.95V
3.89V
1.72V
1.49V
2.58V
2.59V
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E12
E13
E14
E15
E16
E17
GND
+5V
+8.7V
CP+D.HD
R
G
B
B'
R'
YL
+5V
AH R
B BL
R BL

30-2 BOARD DIAGRAM OF BLACK SET BOARD Ⓔ

- CA-E003A



TOP VIEW



BOTTOM VIEW